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THE CATHOLIC CHURCH AND ITS REACTIONS WITH SCIENCE

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THE CATHOLIC CHURCH AND ITS REACTIONS WITH SCIENCE

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By

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TO

THE MEMORY OF

CECILY

WHO WAS PROMISED THE DEDICATION OF A BOOK
BUT COULD NOT STAY TO SEE IT

She did but float a little way
Adown the stream of time,
With dreamy eyes watching the ripples play,
Or hearkening their fairy chime;
Her slender sail
Ne'er felt the gale;
She did but float a little way,
And, putting to the shore
While yet 'twas early day,
Went calmly on her way,
To dwell with us no more.

PREFACE

Had it not been that I have already published a book under that title, though on different lines from this one, this book should have been called "The Church and Science;" but the present title indicates its scope fairly well. The argument of the book, that, if you are going to write or talk about anything, it is as well to know something about it, is sufficiently dealt with in the first or introductory chapter. Being intended for general reading, it has not been thought well to stud the pages with references to the sources of the quotations, though the names of their authors are given for obvious reasons. Should any persons familiar with the apologetics of the present day look into these pages they will readily discover, what I freely admit, that is, my obligations also to a number of writers whose names are not mentioned. My friends, the V. Rev. H. Carr, C.S.B., LL.D., and the V. Rev. Hugh Pope, O.P., D.S.S., have been good enough to read through the typescript, and for their criticisms and suggestions I am very grateful.

It is possible that there may be here and there one who would like to know a little more about

the scholastic teaching so often alluded to within. I should not recommend an immediate plunge into the *Summa Contra Gentes,* even in the excellent Dominican translation, but, if the beginner is in earnest, and will tackle the translation—by Edward Bullough—of Ètienne Gilson's *Le Thomisme,* entitled *The Philosophy of St. Thomas Aquinas,* and published by Heffer, Cambridge, he will find therein an admirable introduction to the subject and one which may perhaps lead him to desire to go further, in which case let him tackle the *Summa* as above.

B. C. A. W.

St. Michael's College
Toronto
March 7, 1926
(Being the Feast of St. Thomas Aquinas)

INTRODUCTION

That it should be supposed there is a conflict between the Catholic Church and physical science is one of the most astonishing psychological phenomena of our time. It is in the nature of a legend, but a legend with no correspondence to reality. It is believed in with a firmness and devotion which makes one envy the faith of the believers, and yet not one of them could tell us the grounds of his belief.

However, the feeling is there; it is very strong; and it must be met with patience.

Like many other strong and highly unified emotions, it has a multiple source. It comes from the coalescence of several streams of experience, false and true. There is, for instance, the obvious fact that the Church in every epoch uses the language of that epoch, being a corporation of living men existent in this world. Therefore, in time, discovery (or retrogression in knowledge, for that matter) renders verbal statement imperfect. And that is true not only of the Church, but of any institution that lives for a long time. Before the discovery of America, a

man might well call the Atlantic "the ocean bounding the world." Indeed, there was a Mohammedan soldier who said exactly that when he rode his horses into the surf on the Moroccan coast. Before certain modern developments of mathematical speculation (and after it), positive statement, as though final, of tridimensional common geometry passed into the metaphor of ecclesiastical as well as of laical talk. Men said, "You might as well expect two parallel lines to meet," or "Matter is impenetrable." The language, though limited, was sound. A truth expressed in each language remains true. But the untrained mind is shocked by the contrast in phraseology. That is one very puerile but very natural origin for the supposed conflict. We get, in any age, ecclesiastics talking the language of that age, though that has nothing whatever to do with doctrine. And to this must be added the fact that *some* language must be talked, whatever the epoch and whatever the extent of knowledge, and that *all* language is metaphorical. For instance, no one ever meant by "ascension into heaven" the crude idea of going up for ever from a plain; but you have to express the idea somehow, and that is roughly the best way of putting it.

Then there is the eternal Galileo incident, which is irrelevant, but dramatic and striking.

Then with a mass of modern men, though only among the uncultured, there is the idea that physical science has discovered a great number of things of a metaphysical sort so that it can refute the metaphysics of a day before its own. Perhaps the crudest example of this misconception was afforded by a Dr. Barnes, Bishop of Birmingham, in England, who thought that modern chemistry had disproved the possibility of a resurrection of the body!

Then there is the mere fact that physical science has lately been advancing very rapidly, while true doctrine upon the only things that matter cannot of its nature "advance"; it can only develop from within, remaining always of the same substance and adding nothing to itself. A man may confusedly conceive that that which is moving in one manner and that which is moving in another must be in conflict, because their modes of being are diverse.

Then there is a very powerful factor—personally I think the most powerful—which proceeds from the misconception that the Catholic Church is a sort of extreme form of what is sometimes called "fundamentalism," and that, whereas most Protestants once did and now do not follow a literal interpretation of the Scriptures, *all* Catholics were bound to it and

could never remain Catholic if they did not so remain bound.

But physical science—and for that matter common experience—perpetually shows Scriptural language to be allegory or metaphor. When a particular visual concept created by the text (for instance, precise locating the first man so many years ago, in such and such a precise place, and the making of him, as it were with hands, out of mud) is upset or weakened by physical discovery, the non-Catholic says, "I was wrong in my old visual concept"; and as his visual concept was all the faith he had, he loses his faith. *He imagines the Catholic to be similarly dependent upon a visual concept,* and he therefore naturally concludes that the Catholic must follow in his footsteps and lose his faith as well.

It is as though an Englishman were to think that the French language could only be artificially taught in classes, and, hearing of some French community where there were no schools, should conclude that the French language could not exist in that community; and that they therefore must, in the nature of things, talk English.

The truth is, of course, that Catholicism lies in the acceptation of doctrine, not in the visual concepts of the believer; that the Catholic Church proposes to the believer, not a series of

pictures called up by his fancy in the realm of imagination, but in the realm of *thought*, a consistent scheme: an explanation of the nature, not of individual phenomena, but of the ultimate causes upon which all phenomena depend.

Now between two or more philosophical conceptions of the universe physical science can never decide. For it is the business of a philosophical conception of the universe to explain what contains phenomena or that without which phenomena would not be. You can never prove by phenomena that one philosophic system is more right than another.

For instance, the observation of mankind has told them for centuries that a stone falls when it is let free from a height. The Catholic Church explains the repetition of this phenomenon by saying that the universe is governed by an Almighty and Perfect Spirit infinite in His attributes, which imposed its special characteristic upon every special form of matter. The atheist says, "No, these characteristics are present, but not through any conscious action; they are inherent in the unconscious mass." The so-called agnostic says that he will not decide between the two conceptions; in other words, that he has no philosophy, a position really impossible for any intelligent being to hold for five consecutive minutes, but one which many think they hold for as

long as they refuse to give a verbal decision one way or the other—although their minds have long ago accepted one or the other solution, for every agnostic is at heart Theist or anti-Theist.

Now all that physical science can do is to add to the number of such phenomena. It cannot discover their ultimate cause. It can only discover sequences. If indeed the Catholic Church were to contain some doctrine whereupon physical observation could be brought to bear, and if that doctrine were found to be invariably opposed to the results of such physical observation, a quarrel would arise. But (singularly enough!) those who are most certain that such a conflict exists have hitherto failed to put their finger upon a single doctrine of the kind.

If the Church had said, for instance, "It is of faith that there never was perennial ice over the area of what is now Northern Britain," then the research of modern geology would present a conflict between dogma and physical science. But when has the Church said any such thing?

What is true is that there is a conflict between that materialist philosophy in the atmosphere of which physical science has been taught outside the Catholic Church, and the philosophy of the Catholic Church. But the philosophy in the atmosphere of which physical science has been taught outside the Catholic Church has nothing

to do with physical science itself; and very lucky it is for science! For the philosophy in the atmosphere of which physical science has till recently been taught outside the Catholic Church is a philosophy already manifestly breaking down.

H. BELLOC.

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THE CATHOLIC CHURCH AND ITS REACTIONS WITH SCIENCE

THE CATHOLIC CHURCH AND ITS REACTIONS WITH SCIENCE

CHAPTER I

ON THE DESIRABILITY OF ACCURACY

Unlike Mr. Thwackum, when I mention religion I mean the Christian religion and not only the Christian religion but the Catholic religion. In thus confining myself to the largest and oldest body of Christians, at present presided over by Pope Pius XI, I intend no want of respect to other bodies. They are out of this picture because my object is to deal with a number of misconceptions or worse commonly entertained as to the attitude of that Church to science. I intend neither to explain the findings of science nor to justify the dogmas of Catholicity, for this is not an apologetic but a cleaning up of dark corners. "Always verify your references," were, according to legend, the words of advice whispered into the ear of Dean Burgon by Routh, that wonderful old man on the threshold of his

century. "Verify your facts," is even better advice and advice which it ought not to be necessary to offer to any scientific worker. Yet it is not out of place here, for, though the Church is quite a large body, exists everywhere and has an abundance of literature, it is apparently considered unnecessary to look up the *Catholic Encyclopædia* or ask a priest or even layman what are the facts before proceeding to make statements about Catholic faith and practice. And so we are told in one book that every priest takes a new name when he is ordained, which is simply not the case. And again that the essence of the marriage rite is the partaking together by the contracting parties of the Blessed Sacrament, which is ludicrously untrue, since the exchange of consents before witnesses, as in the old Scotch marriage (which was a Catholic marriage), is sufficient in essence, though to-day it is hedged round by certain formalities. I am sure that the author of that book would have taken vast trouble to discover what were the facts about the Arunta or the Bushango; why not about Catholics?

The object of this book is to set forth the facts in a number of cases of mistaken statements, and many of these will be found in two books which have been before the public for many years. The first is Draper's *Conflict between*

Religion and Science, which appeared originally in 1874. It has recently been republished with all its innumerable mistakes uncorrected—though they have been refuted many times—and without any statement that it is a reprint other than obscure references which the ordinary reader would never observe. Shadwell, Pope's "True Blue Protestant Poet," according to his satirist, "never deviates into sense," and it may be said that Draper, when dealing with the Catholic Church, never deviates into truth. White's *History of the Warfare of Science and Theology in Christendom* is a different kind of book, for its author was a man of erudition, mixed with strange lapses into ignorance. But for his obvious bias against any religion and especially against the Catholic form, and his woeful lack of any sense of humour, which produces a positive astigmatism when historical perspective is attempted, there might be something to be said for it. And certainly one can but marvel at a man of erudition describing Draper's sack of misstatements as "a work of great ability." A large part of White's two volumes is taken up with describing the mistaken ideas of ancient and mediaeval writers, a field into which I have no intention of following him. For of course they were mistaken and the mistakes were usually made too by clerics of the Catholic Church, for

the obvious reasons that there were no other clerics at that day and that most of the men of education then were clerics.

But selection from both books must be made of fables still widely circulated which require refutation. So to begin with we shall take Papal Infallibility, which seems to so many to be an impossible idea in a world of science. So it would be, if it were what many think it to be, but what it is not. Draper, of course, was bound to go wrong over this and he did. "Notwithstanding his infallibility, which implies omniscience, his Holiness did not foresee the result of the Franco-Prussian War." That war was recently over when this veracious work was published just as it still stands in print.

What are the facts as to Papal Infallibility? Sheehan answers: "The Pope is infallible when he speaks *ex cathedra,* i.e., when, as Pastor and Teacher of Christians, he defines, in virtue of his supreme Apostolical authority, a doctrine concerning Faith or Morals to be held by the Universal Church—[it] must belong to the deposit of Faith, i.e., it must be found in Scripture or Tradition." That puts Draper out of court entirely. The decree does not make a claim to omniscience, and the Franco-Prussian War certainly forms no part of the teaching material of

Scripture or of Tradition. The prevalent idea on the part of those who have not taken the trouble to ascertain the facts is an assumption that Papal Infallibility is equivalent to universal foreknowledge like that just quoted. Not only can the Pope make a pronouncement on any subject in the world and Catholics must believe that statement, but he is liable to wake up any fine morning and make a "definition" just to amuse himself and surprise the world. The fact is that a definition concerning Faith or Morals is of very rare occurrence and that, prior to its announcement, all the world is aware that the matter is under consideration, for every man of learning competent to advise is being consulted with or even summoned to Rome to discuss the matter with the Committee set up by the Pope to help him to come to a decision on the question under agitation.

Take the case of the last Papal definition in 1854,[1] that of the Immaculate Conception. To those who really understand what is entailed in the Incarnation and believe in that event, this other event is simply the most obviously probable occurrence which can be imagined. It was no new idea that sprang up in 1854, for it had been under discussion for many centuries, but the

[1] Papal Infallibility was a dogma defined by the Vatican Council and not by a Pope.

time had then come when it must be definitely settled whether it was or was not a part of the deposit of faith. Who was to settle it? Obviously the Pope, and he did. Why "obviously"? Obviously from the Catholic point of view, which is that Christ founded a Church to last to the end of time; that the Catholic Church is the institution so founded; that He promised that it should be guarded from all error; that He told St. Peter, the first Pope, to instruct his brethren; and that that power of instruction must have gone on to Peter's successors, since the Church was instituted not for one generation but for all time.

Those who are not Catholics very naturally may say that they do not agree with any one of these statements. Obviously; and it is no part of my present task to prove them. What I want to show here is that from the given premises the conclusions follow logically and render the idea not so hopelessly absurd as many suppose. A Presbyterian friend who sought an explanation of this dogma from me, and received it much in these terms, said that he thought the Moderator of his General Assembly might almost go as far. It should be clear that in no kind of way can this dogma conflict with science, since physical facts demonstrable empirically do not come within the scope of faith and morals. And inci-

dentally I may clear up another mistake which I have even seen in books purporting to deal competently with anthropology. The Virgin Birth and the Immaculate Conception are not the same thing but quite otherwise, though the phrases are used, by men who ought to know better, as interchangeable. The Virgin Birth is the belief that our Lord had no earthly father; the Immaculate Conception, that His mother was, at the moment of her conception, relieved of the burden of original sin as children are, in other cases, by baptism. Again readers may believe in none of these things and care for them as little as Gallio, but after all it is just as well, if these phrases are to be used, that they should be used correctly.

There are two other matters of a general character which may be disposed of here—the Imprimatur and the Index. Both of them are much misunderstood and both of them have often been referred to as fetters by which, according to the statements of our sympathetic friends without, Catholic men of science are held in bondage. Now that august institution, the Royal Society, at one time used to issue imprimaturs for books written by its Fellows. I note that Tyson's *Anatomy of a Pygmie* (a most interesting work) received one from John Hoskins, Vice-President, in 1699. The plan has

long fallen into desuetude and no one would be more startled than the present occupant of the presidential chair were he to be asked for an imprimatur for this book by the humble Fellow now typing these lines. What exactly did John Hoskins certify to? I cannot imagine, for he certainly knew nothing whatever about the subjects that Tyson was writing about. I suppose in a general kind of way he certified that it was the sort of book which a man of science might be supposed to write. The Episcopal or other imprimatur has a perfectly definite meaning to Catholics, and it is this. It means that the book has been read by a competent expert, called the *Censor Deputatus,* appointed by the Bishop or other authority; that he has been unable to find anything erroneous in the parts of the book which touch on theological matters; and that he sees no *theological* objection to its being printed. Whereupon the authority says, "Let it be printed." Observe the guarantee is only that the *theological* parts are not unorthodox, i.e., do not appear to oppose any settled doctrines. Not that they are correct—for they may later be censured by the Commission of the Index—but that, at present showing, they are not contrary to the faith. As to anything else that may be in the book, science, history and the like, neither the Censor nor the authority is in any way concerned

with them. Thus there can be no conflict with science here, nor in fact would a book of purely scientific character receive an imprimatur even if it were asked for, since the reply would be that the book had nothing to do with theology and the authority had therefore nothing to do with it. Further, though I believe a priest must—as is not unnatural—obtain an imprimatur for any book touching on religion or philosophy, that is not the case, as I understand, with a layman except his writings contain something which has a special bearing on religion and good morals. The value of an imprimatur is this, that the Catholic reading the book is made aware that a competent authority has seen nothing in it contrary to his faith; and, strange as it may appear to many, Catholics actually do like to have an assurance of that kind since they do like to know where they are in matters of faith.

Now for the *Index Librorum Prohibitorum,* a woeful bugbear to so many. Every decent parent even to-day has his index and will not let his daughters read certain books if he can help it. Is that not mere common sense? Libraries have to deal with the same problem. I remember a great and righteous fuss made by a father who had found his daughter reading that truly filthy work, *La Terre,* which she had loaned from a large subscription library of which I was

at the time president. It was obvious that books of that character must be kept for members of mature age who really wanted to read them, let us hope, for critical reasons only. We decided among ourselves that the members of the committee learned in tongues should supervise the foreign books (*the Congregation of the Index*) and condemn those like that in question to a room (*the Index*) by themselves, where the librarian would issue them to persons of the kind indicated above as supposedly unlikely to be injured by them. That is the principle of the Index in a nutshell, and I may add that the plan worked to the complete satisfaction of the subscribers—no easy body to please—*experto crede!* The Index works also, though not perhaps to the satisfaction of every Catholic, for it cannot be said that one in ten thousand knows what is decided by that Congregation. But he can if he likes ascertain. Here again, strange as it may appear, the real Catholic is quite glad to be told what books are actually harmful and what are not, and the Index, though not meant to be the only norm, tells him something about the former. But permission for scientific workers, as I myself can testify, to read any book on or off the Index save those written for purely pornographic pur-

poses can easily be obtained.[2] "It is an indignity to have to ask for a permit," you say. I do not think so. I am a medical man and can go into a drug store and get deadly poison on my own prescription because I have the license to do so. You, my friend, who are reading these lines and are not a doctor, cannot—are you disgruntled at that? You ought not to be, for the object of it is your personal safety and that of your household. It is true, no doubt, that physical safety appeals more than spiritual to many, but there are still quite a number of persons who are also anxious about spiritual safety and are as grateful for the Index as all sensible persons are for the Poisonous Drugs Act, if that be the proper title. At any rate, here again the practice deprecated is perfectly logical. The Church is regarded by Catholics as the guide in this world to a better in the future; its function is to point out dangers as well as to give help. Included in such dangers are really bad and misleading books.

Yes—may be the reply—but excellent books have been put on the Index. Possibly that is right, for I confess that, in common with most Catholics, I do not keep in touch with the Index, but in many of these cases the placing on the Index refers only to some serious but not funda-

[2] Is it necessary to add, gratuitously?

mental theological error, and when this is amended, the book comes off the Index.

A good many mistaken stories have been told, for example, about Copernicus' book, the first printed copy of which was placed in his hands when his dying eyes could not see it. The facts are that Copernicus' work was not placed on the Index for seventy-three years after its publication, and then only in connection with the Galileo episode. Cardinal Gaetani was delegated to act as its corrector, and after he altered nine sentences in which the heliocentric theory was laid down as a certain fact, toning them down in the direction of probability, and not certainty—which by the way was at least as much as could be proved at that time or had been proved by Galileo—the prohibition was at once removed. Huxley says somewhere that the Congregation of the Index is notoriously unscientific. I suppose he means its members, and it is quite likely that all or most of them may be and have been so. What Huxley did not understand was that the Index is not concerned with science but with theology, and it was because of the supposed theological implications of Copernicus' views that it was thought better they should be put forward tentatively and not positively, for reasons to be explained later. No doubt, where the members of the Congregation desire expert

advice, scientific or non-scientific, they can and do procure it. One of the wildest and most foolish of the ideas rampant about the Church is that its executive is composed of incapables knowing nothing of how business should be carried on. The companion to it is the idea, held by many, that Machiavelli was not at all in their class for artfulness and crooked ways. The fact is that business matters like that of the Index are carried on by a civil service which has the experience of centuries behind it and is no more anxious to make mistakes than are any other conscientious employees of any state.[3]

[3] It may be stated definitely and once for all that the writer is not expressing his own opinions on dogmatic matters. Throughout this book the references to dogma are, with few exceptions and those noted, given from *Apologetics and Catholic Doctrine*, a work by Archbishop Sheehan, of Sidney, N. S. W., written when he was a Professor at Maynooth. As this book was prepared for the use of children in Irish Schools and is issued under the Imprimatur of the Archbishop of Dublin, it need hardly be said that it is of the most rigid orthodoxy. Further it may be taken that it in no way minimises doctrine, and for these two reasons, as well as for the extreme clarity of its statements, it has been selected by the writer as his textbook.

Chapter II

On the Common Error That There Must of Necessity Be a Conflict Between the Church and Science

Repeat anything often enough and forcibly enough and many, even most, people will believe it, though it be untrue and even absurd. Such is the case with the myth named in the heading of this chapter. Naturally if we want to find it in full flower and we look in the pages of Draper we shall not be disappointed, for it was a bed-rock principle with him and with White, his follower. "Then it has come to this," says Draper, "that Roman Christianity and science are recognized by their respective adherents as being absolutely incompatible; they cannot exist together; one must yield to the other; mankind must make its choice—it cannot have both."

A fine example of utter disregard of the truth! Draper was at one time a professor of chemistry, and it must be supposed that he had at least heard of one named Lavoisier. Lavoisier, the father of modern chemistry, went to the guillotine, crucifix in hand, a fervent child of the

Church, at the bidding of Dr. Draper's protégés, the friends of "Reason" who declared, "Nous n'avons plus besoin de chimistes." Yet "their respective adherents" regard the two as "absolutely incompatible." The strange thing is that publishers familiar, one must charitably suppose, with the names of Pasteur, Mendel, Röntgen and many another "respective adherent" of both Roman Christianity and science could allow an edition to go forth to the world with such a palpable and obvious falsehood still uncorrected.

More respectable authority for the statement is to be found in the writings of T. H. Huxley. If he is not "the onlie begetter" of this fable, he is at least its most earnest propagator in recent times. He was impressed, so his biographer states, with the "necessary" (again we have this word "necessary") "antagonism between science and the Roman Catholic doctrine." He told W. G. Ward even to his face, though to be sure it was in response to a challenge, of "the intellectual degradation which would come of the general acceptance of such views as he [Ward] held."

In one of the "Lay Sermons" Huxley writes of "our great antagonist—I speak as a man of science—the Roman Catholic Church, the one spiritual organisation which is able to resist, and must as a matter of life and death, resist, the progress of science and modern civilisation." It

may be well to consider the circumstances which served as the context of this very cocksure deliverance. Its author had recently been on a visit to Maynooth, the well-known place of education for Irish priests. He was much struck with the place and the professors. "It seemed to me that the difference between these men and the comfortable champions of Anglicanism and of Dissent, was comparable to the difference between our gallant volunteers and the trained veterans of Napoleon's Old Guard."

The inversion of the sentence makes it awkward reading, but the meaning is obvious. "The Catholic priest," he continues, "is trained to know his business, and do it effectually." He asked how the young students would be able to withstand the tempest raised by science as then expounded. The reply was: "The same as in the past. The heresies of the day are explained to them by their professors of philosophy and science, and they are taught how these heresies are to be met." Huxley's final judgment was: "I heartily respect an organisation which faces its enemies in this way; and I wish that all ecclesiastical organisations were in as effective a condition." It must be confessed that all this leaves us not a little puzzled. The Church, which cannot exist side by side with science, yet maintains professors of science to teach its embryo

clergymen—evidently able and competent, from what Huxley tells us, for without exception he declares that the professors were "learned, zealous and determined." Where is the conflict? It can be in only one direction. These able men, whilst teaching the facts of science, differed from Huxley and his colleagues in some of the implications drawn from these facts. They told their students that they did, and why they did, and so were charged with resisting the progress of civilisation and showing that the Catholic Church was the necessary opponent of science.

Well, we all know that "orthodoxy is my doxy," and even so it was with Huxley in the Mivart case. Mivart ventured to put out his hand and touch the ark of the covenant by criticising Darwin's recently published *Origin of Species*. His criticisms were of a purely scientific character; they caused Darwin to make some alterations in later editions, which have in many ways since been justified. But he appended some pages from the writings of the Fathers of the Church, to show, what few then knew, that their utterances, so far from being opposed to evolution, were more than patient of it. Seeing that, at the moment, ecclesiastics outside the Church, from Samuel Wilberforce upwards or downwards, as you please, were raging against a doctrine which scarce one of them understood, one

might have supposed that Darwin and Huxley would have accepted this unexpected religious aid at least with decent gratitude. Not a bit of it! Consult the correspondence of the period and it will be seen that Huxley was possessed with the idea—the result of ingrained and ignorant bias—that the scientific criticism was based purely on religious bigotry and that the apparent religious toleration really rested on ignorance of what the Catholic writers meant. A more curious piece of crass intolerance is not to be found in the pages of history.

We need not strive any further to prove the fact that the error is more or less widely held. It is now time to endeavour to trace its origin, and for that purpose some delving into history is necessary. The first thing that stands out quite clearly is that it did not in any way arise from any action of the Reformers, though this attitude came in the wake of, or at least is of a later date than, the Reformation. These men were never tired of declaring that the Catholic Church did not pay sufficient attention to the Bible and its teachings and withheld them both from its children. Oddly enough, that line of attack has so far shifted that modern reformers condemn the Church for a too ardent adherence to the Bible. A further fact, which may startle many to read, emerges quite clearly, namely, that but for the

Reformation and its consequences there would probably never have been any trouble between religion and science at all. "Of course not," I can hear some one exclaim, "Your Church would have taken good care that there was no such thing as science!" Well, again it is curious that, though the rush in output of scientific work was small compared with what we are now accustomed to, the pre-Reformation period was by no means devoid of scientific work or scientific workers, nor was the Reformation in the least a revolt on behalf of science. Far from it; ". . . the reforming leaders were, if anything, less sympathetic to scientific investigation than were the Catholic leaders . . . for one sixteenth century man of science of the reformed faith, like Paracelsus, a dozen Catholics might be named." So Dr. Singer tells us and his right to speak on such a matter will not be doubted. Further, he tells us that Roger Bacon "realised in advance of his age the nature and application of the experimental method" and "frequently uses the phrase *experimental science,* which is for him the sole means of obtaining knowledge." Yet, as he proceeds to show, "there is no trace in Roger Bacon's writings of any consciousness of opposition to religion. He thinks he is writing in support of the faith." Here again I seem to hear some one remark, "But surely your Church

imprisoned Bacon for a dozen or more years on account of his views?" I am aware that certain authorities, and even the *Encyclopædia Britannica,* say so, but the fact remains that the ancient records contain not one word to justify such an assertion. It is probably a lying allegation invented at a comparatively recent date. What is perfectly well known is that all Bacon's important works were sent to Clement IV at that Pontiff's special wish, but that unfortunately he died too soon to make the use that he would otherwise undoubtedly have made of them for the advancement of learning. Again, what shall be done about Cardinal Nicholas de Cusa (1401–1464), who not only did work according to the experimental method, as shown in his treatise on the balance, but who stated in print, years before either Copernicus or Galileo was born, that the earth was in motion. He was the first to propose a reform of the Calendar, similar to that later introduced by Pope Gregory. Finally, let it be noted that Professor Whitehead says that we really owe what is supposed to be an even more modern conception, the union of science with technology, or applied science, as it is sometimes called, to the pre-Reformation Benedictines.

There was then, the record shows, a good deal more scientific work going on before the Reformation than has often been suspected in the

thinking of the immediate past. Was it interfered with in any way? There is only one case which can be colourably assigned to such a cause known to me or, what is more to the point, known to the learned Dr. Wedel, who has carefully investigated the matter. He declares that it was "an almost isolated instance in the history of the Inquisition." That is the case of Francesco degli Stabili, commonly known as Cecco d'Ascoli, burnt to death in 1327. This man was an astrologer. They were in so far forth the astronomers of their day. But Cecco was burnt not for any supposed scientific heresies but for heresies of another order—of which more in another chapter. In that age burning at the stake was a punishment decreed by law as imposable on heretics, but our comments on this point will be deferred until the perennial Galileo episode comes up for discussion.

No one will suspect Dean Inge of any tenderness for the Church, and so a remark of his when alluding to the setback to learning which the Reformation produced is important evidence on the point which I am urging: "It is useless to ask whether the Catholics or the Protestants were the most guilty of this setback to civilisation. It was not Catholicism or Protestantism, but the state of war between them, which had this evil consequence. Christianity [let it be noted that

there was no other brand of Christianity but Catholicity prior to the Reformation], when unmenaced, is no enemy to culture." What did happen after the Reformation was that Catholic interpreters did undoubtedly stiffen up and give more rigidity to their exegesis under the stimulus of puritan taunts and to that extent departed a good deal from the more liberal method of construing the text which had persisted since the time of St. Augustine of Hippo.

But there was another and a more potent factor. The Reformation, especially in England, had been accompanied by a seizure of religious property unparalleled even in these days. Much of the plunder had slipped into the itching palms of certain families of which the Cecils were the most important. That family for some sixty years controlled the destinies of the British Isles with a single eye to holding what they had, and, in that cause, preventing the Catholic Church ever coming again into any of her own possessions, of which they had robbed it. Even Dean Inge in saying that, "when war is declared, every nation or institution must subordinate all other considerations to the necessity of victory," adds a touch of his own—"of cynical disregard of truth and fairness." That policy Britain under the Cecils certainly followed, and, when they were done with their task, Catholicity had

so nearly been wiped out that at a much later date, in his *Peter Plymley's Letters,* Sydney Smith's chief argument was that the Catholics were so few in number that they could not do any harm even if they would.

The Cecils did not bother to allege that the Church and science were opposed, first because they neither knew nor cared anything about either, and secondly because no one would then have minded if there were such an opposition.

But in the fulness of time Huxley came along and took up the mission, as some one has put it, of making science respectable. He did so, but he did not stop at that, for he succeeded in implanting in the minds of men the notion that to attempt in any way to interfere with science, even the science thus far achieved, was a crime hardly second to treason felony. And one other thing that he had in mind to do, and very nearly succeeded in doing, was to establish in the minds of men his own mistaken idea, conceived in ignorance and nurtured in bias, that between the Church and science there could be neither agreement nor even truce. Yet there was a whole series of facts to the contrary open to his eyes if he had cared to look at them, and these must be very briefly set down.

First of all we mention the Universities. While some of them seem to have had no sponsors

but just occurred, like Oxford and Cambridge, a large number of the older Universities were founded by Papal Bulls. Glasgow University, eminently fair to all denominations as it is, may nevertheless be fairly described as a Presbyterian institution. Yet over the mantle of its Senate Room is the head of Nicholas V, crowned with the tiara, by whose Bull, obtained by the then Catholic Archbishop of that city, the University was founded. Again, St. Andrews was founded by a body of clerics, headed by the Abbot of Scone; chartered by Bishop Henry Wardlaw; and confirmed in its privileges by no less than six Bulls issued by Benedict XIII. It avails nothing to urge that these and other similarly founded Universities were mere schools of theology, for that is patently not in accord with the facts. Each was a Studium Generale, a place of general instruction; and there are instances where ecclesiastical preferments were given to laymen as well as to clerics on the understanding that they were to teach scientific subjects. It constituted a method of endowment of scientific research common in a day when the Church had vast endowments. Copernicus and Fallopius were both laymen and both "Canons" of cathedral churches. The second field of evidence which might have engaged Huxley's attention was the vast number of names eminent in the

science of the post-Reformation period whose owners were not merely nominal Catholics, but fervent children of the Church. A few have been already spoken of, but what of Galvani, Volta, Ampère, Coulomb, Ohm, all of whose names are now immortalised in the nomenclature of electricity? What about the Abbé Haüy, the father of crystallography, who died the same year as Pasteur, who began his triumphant scientific progress by investigations along lines made possible by the researches of the Abbé? Again, what shall be said of Nicolaus Stensen, the father of modern geology, a convert from Lutheranism who died a Catholic bishop? But it would be tedious to the reader for us to go on with the list; suffice it to say that when it comes to matching man of science with man of science the Catholic side will not be the first to run out of names. Is it not absurd trifling with language to talk about a Church which can retain scores of men like those named as driven by necessity to be the absolute enemy of science?

Safeguarding ourselves by an admission that neither of the two quotations that follow could have been before Huxley, let us take two public utterances, one officially made by a Pope, the other the careful statement of one of the leading men of science of our day. Pope Leo XIII is recognised by all as one of the greatest of the

long line of occupants of the Chair of St. Peter, and one quotation will suffice to indicate both his attitude and that of the Church to science.

> When it is said that the Church is jealous of modern political system, and that she repudiates the discoveries of modern research, the charge is a groundless and wicked calumny. Wild opinions she does repudiate; wicked and seditious projects she does condemn; together with that habit of mind which points to the beginning of a wilful departure from God. But as all truth must necessarily proceed from God, the Church recognises in all truth that is reached by research a trace of the divine intelligence. And as all truth in the natural order is powerless to destroy belief in the teachings of revelation, but can do much to confirm it, and as every newly discovered truth may serve to further the knowledge or the praise of God, it follows that whatever spreads the range of knowledge will always be willingly and even joyfully welcomed by the Church. She will always encourage and promote, as she does in all other branches of knowledge, all study occupied with the investigation of Nature.

Albert de Lapparent, who died in 1908, was elected, in the year prior to his death, to the

important position of Permanent Secretary to the Academie des Sciences, eloquent proof of the opinion held of him in his own country. *Nature* shall testify to what was thought of him in England. "By his death the cause of science has been deprived of one of its most strenuous and successful advocates. . . . . He was an eminently religious man, and sacrificed not a little in life for the sake of his convictions. No temptation could induce him to abandon the Institut Catholique, where, from its foundation, he continued to be one of its pillars." If any further proof of the inaccuracy of the statement that there is an irreconcilable contest between the Church and science and that a choice must be made between the two for no man can have both, it is to be found in the words just quoted from a leading journal with no religious bias. They completely dispose of the statements of Huxley, Draper and their kind.

It may not be amiss to hear what de Lapparent himself had to say on this matter, apropos of some remarks of an irresponsible heresy hunter—there is at least one in every religious body in every land. The result of the efforts of such an one, he tells us,

> was only to demonstrate the extreme wisdom of the authorities whom they were

> attempting to rouse. These supreme judges were not disturbed. So far they have seen nothing incorrect in the enunciation, which of course is subject to ulterior rectification, of theories in which one is satisfied with summarising the facts which seem established by observation. I feel bound to state that no one ever felt so free in speech and writings as I myself have done. Rarely indeed has a professor received more explicit continual assurances of a good will all the more valued as it came from headquarters.

The series of facts brought forward in this chapter surely ought to be sufficient to dispose of the myth that there must of necessity be a conflict between the Church and science; that is, as far as general and fundamental opposition is concerned, for it is to be admitted that occasional clashes may have occurred, as future chapters will show.

Chapter III

ON SIMILARITY OF METHODS IN RELIGION AND SCIENCE

Associations avowedly opposed to revealed religion seem to like to call themselves "Rationalistic," and their members and others like them are fond of dubbing themselves "Rationalists." It may be assumed that the idea which they wish to spread is that irreligion, if that word may be used, is based on reason, but that religion is not, and further that science is a product of pure reason. They take these ideas as postulates, but is there any truth in them?

Professor Whitehead is a man of science and a philosopher who is peculiarly fitted to speak on such matters. He tells us that

> faith in the possibility of science . . . is an unconscious derivative from mediaeval theology. [And further that] science has never shaken off the impress of its origin in the historical revolt of the later Renaissance. It has remained predominantly an anti-rationalistic movement based upon a

> naive faith (still again). What reasoning it has wanted, has been borrowed from mathematics which is a surviving relic of Greek rationalism, following the deductive method. Science repudiates philosophy. In other words it has never cared to justify its faith or to explain its meanings; and has remained blandly indifferent to its refutation by Hume.

The reaction against the later mediaeval philosophy, he says, was a very sensible one, "but it was not a protest on behalf of reason." Stopping only long enough to interject that I agree that the philosophy of the later scholastics had become hair-splitting in too many cases and that a protest was required and a return to facts necessary, let us pursue this point a little further under the same guidance. We are told by much the same people as those of whom I have been speaking that the Middle Ages were those of faith—which is true no doubt—but faith untroubled by reason, and that reason came through science after the Reformation, all of which is quite wrong. Let us turn to Whitehead again:

> The Middle Ages were haunted with the desire to rationalise the infinite; the men of the eighteenth century rationalised the social life of modern communities, and based their

> sociological theories on an appeal to the facts of nature. The earlier period was the age of faith based upon reason. In the later period they let sleeping dogs lie: it was the age of reason based on faith. To illustrate my meaning: St. Anselm would have been distressed if he had failed to find a convincing proof for the existence of God, and on this argument he based his edifice of faith, whereas Hume based his *Dissertation on the Natural History of Religion* upon his faith in the order of nature.

In a word, religion began with reason and then proceeded to faith, whilst science begins with faith and builds up a reasoned edifice upon it. Anyone who has studied the thought of the Middle Ages—perhaps that would be too much to expect of rationalists—will agree with the writer just quoted in his facts, and his deductions seem inevitable.

Every Catholic writer on the subject will tell you that faith is based on reason. It is the direct teaching of the Church at the Vatican Council that man can, by the exercise of his reason alone, attain to a knowledge of God and to some of the more important at least of His attributes. Further, we are taught by theologians that when a man makes an act of faith without compre-

hending the motives of believing, he is in error, for it is an act of credulity and not one of faith which he makes. I can, for instance, get at facts in more than one way. If I want to know the volume of a cylinder I can, if I know how, work the problem out either by mathematics or by experiment; or I can ask a competent person to tell me what its volume is. In the last case I proceed on the lines of authority, and, in doing so, I convince myself first of all by an act of reason that my authority is a reliable one. This is only doing what every man of business does time and again in the conduct of his affairs. Catholics then base their faith on reason and accept authority—of which more in the next chapter—only as one of its outcomes.

But now, after thus showing that reason is not all confined to the scientific side, let us turn to the common features of religion and science. Naturally, in the first instance, the student of either religion or science must have a certain curiosity to learn the facts of his subject; he must try to purge his mind of *parti pris* and of false ideas, Bacon's *idola;* he must check up his observations, distrusting the reports of his senses until he has done so; and—what is very important—he must cultivate humility. That perhaps will be found necessary to enable him to support the making of an act of faith in certain First Prin-

ciples which he cannot prove. Huxley said that the one act of faith for the convert to science was the acceptance of the universality of order and the absolute validity of the law of causation. Two acts, these, to be accurate; but there are others, as Huxley doubtless would have admitted if he had not been dealing exclusively with science. The student, whether of science or religion, must believe (1) in his own existence and (2) that of an external world which (3) he can recognise by his senses, (4) whose evidence, carefully checked, may be regarded as trustworthy (5) that there is such a thing as truth and (6) that it is not beyond the power of a man's mind to arrive at it; (7) that order is universal, which belief Boodin says is a "stupendous venture of creative imagination," yet "there can be no living science unless there is a widespread instinctive conviction in the existence of an *Order of Things*, and in particular, of an *Order of Nature*";[1] and (8) he must believe in the principle of causality. "Nothing happens without a cause," is the enunciation of Leucippus, which Boodin calls "perhaps the most momentous hypothesis in the history of science," one without which science is an absolute impossibility. Finally he must believe that he has (9) a memory which, again, if its pronouncements are checked, is to

[1] Whitehead.

be relied upon. Such is the preliminary credo of both the religious and the scientific student, without which neither can get on.

The first point then to be noted is that science rests on things which cannot be proved. So far it goes hand in hand with religion. Religion has, says Canon Frèmont, three attributes, so to speak: first, dogma—an end of the appeal to reason. Science has or wishes to have that too, as the next chapter will show. Second, ritual, which appeals to the imagination—while science has nothing to do with ritual; if a man of science has no imagination he may become what Huxley called a "hodman" in that subject, but never anything more. And third, religion has moral laws with which science has nothing to do, for morality cannot be learnt from science or from the workings of nature—in spite of the quite futile arguments of some writers.

To return now to this question of dogma based on reason, how does science attempt to arrive at truth, i.e., a dogma? Collecting facts that have been rigorously checked is its first move. That work is fundamental, for the facts are the stones out of which the future edifice of truth is to be built. Next, what is the nature of the edifice? Some kind of a theory; but the moment that the scientific man becomes an architect and theory builder he also changes his voca-

tion and becomes a philosopher, for he is then seeking to arrive at the ultimate explanation of some problem. It is just here that he must avoid preconceptions. Speaking of ethnological theories, Sir Alfred Lyall said a number of years ago: "I think that one effect of the accumulation of materials has been to encourage speculative generalisation, because it has provided a repertory out of which one may make arbitrary selection of examples and precedents to suit any theory." A Daniel come to judgment! in science generally and not merely in ethnology, though there perhaps in greatest measure. At any rate, if the theorist is careless and neglects to take into consideration the counter indications to his hypothesis, someone else will bring them forward, and thus in one way or another a theory is ultimately hammered out and has its day. It may become generally accepted and have a long life, or again it may soon go to the scrap heap.

History and religion follow the same path as science. All three must get their facts together first, and here of course there is an obvious difference in kind between the facts. Science depends on observations which can, in the vast majority of cases, be repeated over and over again and thus be verified. Religion depends for its facts partly on revelation which naturally is given once and for all, and partly, like history, on the accounts

extant of persons and doings in the past which can never be called up nor repeated for experimental purposes. Hence, some contend that the facts of history or religion are to be discredited in comparison with the facts of science. It is indubitably true that we cannot cause Charlemagne, Julius Caesar and other heroes of the past to repeat their experiences, but it would be absurd to suppose that we cannot, therefore, attain to certitude of truth in historical matters. As a matter of fact, bearing the constant changes of opinion in the sciences in mind, are we always quite so sure of so-called scientific facts as it was thought we were in the mid-Victorian age? During that period it was fashionable to imagine not merely that everything was going to be settled by science and not later than the day after to-morrow, but also that most of history and nearly all of religion were myths. Historical and religious documents have gone through a fiery furnace of trial and, as far as a non-expert can see, the result has very greatly strengthened their position. Excavations, the Oxyrhynchus papyri and other evidence have established much in the Bible that the a priori Higher Critics previously would have none of. Tradition is recognised as being far more reliable than many felt compelled to suppose, and we are returning from the old silly scepticism to the only sensible atti-

tude towards the tales of such persons as King Arthur, namely, that behind each of them is a real man of whose life the legends give an account, embellished no doubt, but in the main correct. At Bryn yr Ellyllon near Flint there was a burial mound which, legend *ab immemorabili* said, was haunted by a ghost in golden armour. Excavation yielded up not so long ago a suit of bronze armour near enough in appearance to be taken for gold. Unless you argue that there was a real ghost, it is difficult to see any other kernel to this legend but a long, persistent tradition based on the burial of this bronze-age chieftain in his panoply. Plenty other such examples could be cited.

Thus from facts or what are taken to be facts both science and religion construct dogmas, but with this difference: the Church is almost incredibly slow in laying down a dogma; she will admit a certain opinion, such as that of the Assumption, to be tenable or more than tenable, but even that is not equal to pronouncing it a dogma. Only when a serious dispute arises in a theological matter as to what is or is not the teaching of the Church, or in the case of an almost unanimous call for a definition, is one at all likely to be made. It took centuries, for instance, to produce the dogma of the Immaculate Conception. But when once a dogma is defined it stays

put. Science behaves otherwise, for it has set up many a dogma, such as anti-vitalism or extreme Weismannism, which has not been long-lived. Of course there is another important difference. It does not seriously matter to a man's life whether vitalism or Weismannism is or is not true, though time was when such opinions would have weighed seriously in regard to candidates with boards of electors to biological professorships. But, if there is truth in religion, it does matter very much, so Catholics hold, what a man believes. There is a certain group of dogmas—much smaller than most people imagine—which a man must believe, or cease to be a Catholic. "Rank intolerance!" some will reply. Well, although I am an ignorant outsider, I imagine that a similar statement might be made about Freemasonry, and I am sure that a Prohibition organisation would hardly tolerate a member who habitually attended its meetings in a state of intoxication. Every organisation must make its own rules of membership and, if as the Church teaches, it is really important for their own best good that men should become its members, the demands for admission should not be made greater than is absolutely necessary. But a limited list of dogmas she must prescribe. Science would do the same if she could, for it is quite clear that similar dogmas are its goal, since

no one would go on hunting for the truth who had made up his mind that it was obviously impossible of attainment. And, when arrived at, the truth certainly takes the form of dogma.

Such then are the parallels between the methods of science and religion. Is it too much to claim that the argument has not been pushed further than is reasonable and that from it the following considerations emerge?

No one was more emphatic than the late Professor Huxley in asserting the fact that physical science neither had nor could upset the argument for Theism, and he sternly and properly rebuked those who pretended that by arguments drawn from physical science they could disprove that belief. The philosophical position of Theism he declared quite correctly to have been absolutely untouched by the flood of scientific knowledge. Of course that is admitted by all serious thinkers and the contrary is never urged save from soap boxes. Hence it is not unscientific to believe in the existence of a personal God. Nor in that case is it unscientific to believe in a revelation, in spite of the fact that Reinach says that the hypothesis of a primitive revelation is "gratuitous and puerile." Really, a more unscientific remark was never set down in writing, for a puerile hypothesis is one which none but a small child would advance. But science has absolutely

nothing to say for or against belief in revelation save that she cannot otherwise explain the almost universal idea of primitive peoples that their moral codes have been so derived. Jevons is speaking much more scientifically when he says that "we cannot maintain it to be impossible or even improbable that such revelation may have been made to primitive man." Of course the only possible major premise that will support Reinach's statement quoted above is that there is no God—and that negation we have just seen to be quite unprovable.

The similarities just discussed make it clear that to speak of religion and science as if they were things of different worlds is not in accordance with the facts. Science, Huxley once said, is organised common sense. That the world's modest supply of common sense has not been cornered by the men whose life-work it is to probe into the secrets of nature is not subject to dispute.

Chapter IV

ON PHILOSOPHY AND ESPECIALLY ON AUTHORITY IN PHILOSOPHY

As soon as the man of science ceases to be a mere collector of facts and proceeds to reason out their underlying significance, he enters the field of philosophy. That opens the way for collision with philosophers who employ other categories, for example, religious. Hence it becomes essential at this point to devote a chapter to Catholic philosophy, a subject much misunderstood not merely by almost all non-Catholics but, it is to be feared, by some Catholics. In the first place, it is quite inaccurate to say, as a recent writer does, that "the test of Catholic orthodoxy is agreement with Aquinas." Even McDougal is guilty of a most ambiguous statement at the best when he says that the teachings of St. Thomas Aquinas in his use of scholastic philosophy "have remained with comparatively little change the doctrines of the Roman Church." There are other philosophies, such as the Augustinian, which are or have been taught within the Church, but it is fair to say that, in so far as she

has especially favoured any philosophy, that philosophy is the scholastic or Thomistic. This has been more plainly shown since the early years of the Pontificate of Leo XIII by his encyclicals on the subject, and by his foundation of the Thomistic Institute at Louvain.

It will be necessary to explain how this situation came about. Up to the thirteenth century the teaching of the Church was mainly influenced by St. Augustine, a thinker saturated in Platonism. Only with the incoming of Arab learning into Europe after the Crusades did the Aristotelian philosophy, the competitor of Platonism, begin slowly to creep into Catholic thought, becoming known through the commentaries by Arab teachers such as Averroes and Avicenna. The system of Aristotle, whom Dante called the master of all who know, is very different from that of Plato, as a recent writer has set forth in picturesque language which may here be quoted:

> Passing from Plato to Aristotle is like moving from a verandah, where, looking out, one can feast his eyes upon an exquisite scene of beauty whose farthest distances are lightly clothed in mystic, coloured haze, and returning into a comfortable, well-ordered room where everything is at hand or at least accessible. Transcendent mysteries are out-

side, but here one can sit and do one's work. Aristotle is like that. Man and Nature are his theme. He made philosophy a science, while Plato was turning it into a religion.[1] He is not non-religious but his main interests are ethical and physical. These two philosophies represent the opposite poles of thought and mental temperament; they are not antagonistic but complementary.

The Aristotelian philosophy began to make great headway in the Universities, not in its purity, but mixed with the highly materialistic comments of the Arabian philosophers, which made it clearly a danger, and so it was forbidden in that form by the Popes.

But it was none the less perfectly obvious that the philosophy itself must be rendered available for Catholic students by purging it of its materialistic accretions and fitting it into a Christian frame. This work was the task of Albertus Magnus and St. Thomas Aquinas, his greater pupil. The former was a really great man, the father of botany, as Dr. Singer says, but he had a more credulous mind than Aquinas. In the works of the latter none of the strange fables

[1] Personally I should like to amend Mr. Vial's statement by saying that Plato was laying a foundation on which centuries later neo-Platonism would erect religion.

appears which the elder man accepted as veracious. Dr. Wicksteed, one of the few non-Catholics who knew his St. Thomas—few Catholics perhaps know him better—sums up his work thus:

> Thomas knows perfectly well what he is doing, and has not the least desire to conceal it. Thus it often happens that what, in other cases, we have to conjecture or detect is in his case deliberately set out before us, and that too by an intelligence of which lucidity, order, and fearless integrity are no less characteristic than profundity. Aquinas arranges a formal alliance as between two high contracting parties, in which frontiers are determined, principles laid down, relations defined, and rights safeguarded with admirable precision; but the whole is inspired by an *entente cordiale,* in marked contrast with the lurking suspicions or repudiations with which in many other cases Christian teachers have attempted to fence or disguise their indebtedness to Ethnic thinkers or practices.

Such was the process, and the philosophy thus produced dominated the Christian world until the Renaissance. Of course contests were waged against it and the one with the Latin Averroists

was severe and critical. McDougal refers to this controversy in a curious manner: "In the thirteenth century the philosophers whose speculations were of a naturalistic tendency, especially those of the University of Paris, adopted the ingenious subterfuge of distinguishing two forms of truth, the theological and the philosophical, in order to free scientific speculation from the restrictive tendencies of the Church." "Harping on my daughter" still, please note—the restrictions of the Church!

The facts are that the Latin Averroists, of whom Siger de Brabant was a prominent leader, were so enamoured of the Arab commentator that, in order to conciliate his ideas with those of theology, they invented the preposterous theory of the "two truths," one in philosophy only and the other confined to theology. Siger admitted that his writings were directed "contra praecipuos viros in philosophia Albertum et Thomam," and Kilwardby, Archbishop of Canterbury, headed the English Dominicans who joined in this assault on their brother in religion. That much teaching of this kind was given in the University of Paris is true, but it must not be taken for granted that it was ever officially accepted, for in fact it was stoutly disputed by St. Thomas, and absolutely condemned by Stephen Tempier, Bishop of Paris, in 1277. It

will hardly be claimed, even by the most unfriendly critic, I imagine, that putting a stop to pestilent nonsense like the doctrine that two contradictory statements about the same thing might both be true, was an effort to interfere with the progress of science.

For years it was the fashion in intellectual circles to belittle the scholastic philosophy by alleging that the time of its professors was largely taken up in estimating how many angels could perch on the point of a needle, and discussions of that type. I have never been able to run down this particular puzzle problem to its source nor find anyone who could give me a notion of its origin. Of course, it may have been used in some classroom as a concrete example of the relations between the extended or the material and the unextended or the spiritual, but, if so, I am very curious to know just where. Still, that would not lessen the mystery as to how otherwise intelligent people come to suppose that a philosophy which could hold the field for centuries, and be discussed seriously by so many men of the first rank of intellect, could be the thing of shreds and patches which scholasticism has been pictured. Some idea, however, of the gross ignorance concerning it may be gained from an incident during the argument of the case for the teaching of this philosophy in Belfast University before the Irish

Privy Council but a few years ago. A witness, imported from Scotland to give expert evidence, began his objections to scholastic philosophy by stating that it enjoined the celibacy of the clergy, a subject which is never in the remotest manner mentioned in it. But then one of the members of the body before which he was pleading had previously said that everybody kept St. Thomas Aquinas' *Imitation of Christ* on his bedside table.

Let us turn from sapient persons like these and take as a witness a philosopher who is not a Catholic, Professor Whitehead, who says: "The habit of exact definite thought was implanted in the European mind by the long dominance of scholastic logic and scholastic divinity. The habit remained after the philosophy had been repudiated; the priceless habit of looking for an exact point and sticking to it." It was through this discipline then that, as he also says, the Middle Ages "was preëminently an epoch of orderly thought, rationalist through and through," and the philosophy "formed one long training of the intellect of Western Europe in the sense of order." That should suffice to establish the value of the scholastic discipline in the days when it was supreme.

What about its later history? Scholasticism, after years of debate, did tend undoubtedly to become thin-spun and even decadent. Indeed,

no less recently than fifty years ago, if scholastic thought were to retain its standing in competition with other philosophies in Catholic centres of learning, the whole system required to be overhauled and restated. In fact, it was necessary that some one should do for it what St. Thomas did in the earlier age, namely, harmonise it with the thought of the day. That was the intention of Leo XIII, who was fully acquainted himself with the value of the system, when he set up the Thomistic Institute at Louvain. Given charge of it was a "tall young Abbé," as he was described at the time, who dedicated himself to a first-hand study of science both pure and applied, and to the discussion of what he thus learnt in terms of scholastic philosophy. That tall young Abbé, who has just died, was Cardinal Mercier, and in his lifetime he brought the philosophy of St. Thomas into harmony with modern science. Shorn of some needless accretions, it is once more the trenchant weapon which taught exact thought to the men of the Middle Ages, a lesson of which many men stand in need to-day.

"Science when divorced from Philosophy"—as it almost invariably is to-day with lamentable results—"inevitably falls a prey to faulty logic and uncritical metaphysics. . . . in addition to observation and experiment, science has need of far-reaching ratiocination for its proper working

out." These are the words of Professor Jennings of Johns Hopkins University, and no one will deny his right to speak of science and its needs and shortcomings.

The final complaint, of course, is that this whole system of philosophy is vitiated by the fact that it is tied and bound hand and foot to authority: a mere puppet in the hands of the theologians. There is a complete failure on the part of such complainants to distinguish between scholastic philosophy and scholastic theology. They are quite distinct studies, though many men—for instance, St. Thomas—have written on both. Nothing is more definitely repudiated than this charge of the dependence of philosophy on authority by the entire chorus of scholastic writers. St. Thomas says that the argument from human authority is the weakest. Another philosopher says that authority is like a nose of wax, for one can bend it in any direction. But let us turn to Professor de Wulf, the acknowledged authority on mediaeval philosophy, to sum up this argument in rebuttal. Contrasting scholastic theology with philosophy, he says:

> The one is based on the revealed word, the other on the light of reason; the one is built up by way of authority, the other proceeds by scientific proofs. Thomas of

> Aquin, Henry of Ghent, Bonaventure, Godfrey of Fontaine, Duns Scotus, in a word *all* the scholastics, have given expression to the same view regarding the distinction between theological science and philosophical science.

Then he goes on to show that the content of the ideas in philosophy is not fixed by dogma, for thus philosophy would be robbed of all liberty. In fact, he puts into other words what Whitehead, his non-Catholic brother-philosopher quoted above, said when he wrote of the rationalistic arguments of the Middle Ages.

There may be many who will not to-day agree to adopt the scholastic philosophy as their own, but only the ignorant will doubt that it is a complete, virile and active system which has renewed its youth under the efforts of Cardinal Mercier and the neo-scholastics, and now takes the field again in the interests of exact thinking and true scientific interpretation.

Chapter V

ON AUTHORITY IN DOCTRINE

The Church claims to have absolute authority in matters of Faith and Morals, and demands from her adherents absolute submission in these matters—such is the statement and perhaps the only one of the statements intended to be derogatory to the Church which is entirely true. But when those who make it go on to say that the mind of a Catholic is thereby so tied up that all freedom of thought is denied to him in Faith and Morals—which is of course the direct inference immediately drawn from the above statement—I deny entirely the truth of that inference. The whole question is so woefully misapprehended that the chance seems almost hopeless of hitting upon an exposition that will enable outsiders to understand the Catholic position on this matter. I will make the attempt in good faith at an exposition which, whilst it may not be adopted, at least cannot be condemned as foolish and illogical.

The whole basis of Catholic teaching, the reader will recall, is that there is such a thing

as objective truth and that man can grasp it. That is no new position, for Socrates upheld it against the subjectivism of the sophists and Pragmatism did not begin either in our days. The Reformation, amongst other things, was an absolute revolt against this belief in objective truth in favour of subjectivism. Right or wrong, and I am not arguing the matter, that was the view of Luther, and the plot which he seeded was afterwards well watered by Kant. It is an acceptable philosophy, it would appear, to many, but Catholicism will have none of it. That is the first point.

My second point is that the Catholic believes that his Church is in possession of objective truth in matters of Faith and Morals to whatever extent is necessary to his salvation. There are a lot of matters, he will admit, that he is not likely to understand—while he is in this world at any rate. But there is a sufficiency of truth, and that sufficiency or allotment necessary to salvation he is prepared to accept from his spiritual guide as he accepts medical or legal advice from the members of those professions whom he has chosen after careful thought, if he is a person of ordinary common sense. There will be this difference—he hopes that his medical or legal counsel may be right, whilst he is sure that his spiritual will be. At this point, of course, the outsider springs

up in protest against what he calls a man of sound intellect placing himself in such a state of bondage to authority. He says he cannot understand it. Perhaps not, but let him try by looking at it in this way: How has the Catholic arrived at the conclusion that he may with perfect safety trust his Church to the extent described above? By one method only, namely, the track of reason. If the reader has reasoned the matter out thoroughly, which quite possibly he may never have done, and has arrived at the conclusion that he could not trust any guide, medical, legal or spiritual, as far as that, at least let him grant that the Catholic has used the same method to arrive at a different conclusion. Then let him meditate on the words of Cromwell: "My brethren, by the bowels of Christ, I beseech you, bethink you that you may be mistaken." A decent humility will oblige him to admit that on this matter it is at least as likely that he may be wrong as that his Catholic neighbour may. And I can assure him that the words of Cromwell have rung many times in any man's ears before he has taken the step of accepting the authority of the Church. He may of course have been born into it and have taken the whole thing lightly all his life, but never questioned it. However, on the contrary, although he may have been born in it, he may have kept within it after

struggles against those difficulties which must confront every thinking man. Newman could say of them that one million did not make one doubt. Or he may have succumbed to them, as has often happened, and gone out of the faith only to return after trying what other religions or no religion could do for him. Or most remarkable of all, he may have been born and come in from outside. Some twelve thousand annually perform that feat, so surprising to many others outside, each year in England, and the daily papers are sufficient witnesses to indicate that at least a considerable sprinkling of these are people certainly not less endowed with brains than many who stay outside.

Yes, I admit there are also leakages, but that has nothing on earth to do with the immediate question I am discussing—namely, why do these or any other people give up their liberty to enter the "bondage" of the Church? There is a tale, probably mythical, that Melancthon, the most human of the dour lot to whom he belonged, was asked by his mother whether the Catholicism of her youth or the Reformed faith of her son was the better, and of his telling her that the Protestant religion was the better to live in, the Catholic to die in. The part about living is no doubt true, so far as creature comfort goes. No one will say at any rate that the profession

of Catholicity is a passport to position, money, influence or anything of that kind; notoriously it is precisely the opposite—ask anyone who has embraced it and has lived ten, twenty or more years in it.

The man who comes in and stays in, and the overwhelming majority do remain, enters for one reason and one reason only, that is, having argued it out with himself, he is convinced *by his reason* that he is right in submitting to that authority. Without unduly priding yourself as an outsider on your superior abilities, you cannot possibly claim that, in exercising that reason common to you both, you are quite certainly right but he has quite certainly made a mistake. Further, as Brunetière pointed out in an article in the *Revue des Deux Mondes,* in which he talked of the "bankruptcy of science," the "tyranny of dogma" is only tyranny—if we are to keep to that word—in dogmatic matters. This is clear from the fact that it has never stood in the way of the speculations of geometry or interfered with the dissections of the anatomist, human or comparative, or the experimental operations of the physiologist. Of course, there is the one instance to the contrary, the one exception in some two thousand years, as Cardinal Newman pointed out, where the Church, in the person of one of its Congregations, did make a clear mistake—the

Galileo incident. But that must be reserved for discussion in another chapter. On any given doctrine of Faith or Morals, however, to pursue our point, its very belief in objective truth makes the Church insist that the same body cannot hold two diametrically opposed views—the principle of contradiction forbids. She makes no comment on religious bodies which do not see any difficulty in letting contradictory doctrines be proclaimed in their names, but she does.

Further, she cannot see how there can be two systems of religious truth any more than two kinds of truth in any department of knowledge. Therefore she cannot fall in with the views of those who proclaim so loudly to-day that to think that mankind will ever espouse a single religion is to imagine a vain thing. Here again you may disagree, but, if you recall the premises, you must admit that the conclusions are quite logical. Do I hear you say that you do not agree with the premises? I am sorry. Then, too, we have already agreed that, humanly speaking, it is possible that you may be wrong.

Nor does the Church see how it can be possible to jettison large masses of dogma, as is now done on all sides, nor can she understand what people mean by adapting the Church to the age, other than that they think of it as a kind of doctrinal kaleidoscope which can be twisted and turned

and the spectrum of truth thus be adjusted in all sorts of queer fashions. From the platform of subjectivism all that is not only allowable but admirable, but from the standpoint of the existence of objective truth which can be reached, it is not permissible, for when objective truth has been reached on any point, how can it be changed or adapted? And is not that exactly the teaching also of science? Of course it is, for science is always in quest of final objective fact, and when it gets hold of a bit of objective truth science is as much bound by it as the Catholic is by the dogmas—also objective facts in his firm belief—of religion. Claude Bernard said that freedom of thought was over in science face to face with definitely ascertained facts. Or again, as Comte put it, there cannot be freedom of thought as long as science stands in the way; for a man cannot be free, until arithmetic and geometry cease, to believe that $2 + 2 = 5$, or that the three angles of a triangle are more or less than two right angles. Huxley was abundantly right when he said that "many a modern free-thinker makes use of his freedom mainly to vent nonsense." Said Lord Melbourne, and though the tale is somewhat ancient, its repetition may be permitted, "I wish that I was as sure of anything as Tom Macaulay is of everything." That kind of free-thinker who is never tired of saying that

he has abandoned religion for a variety of reasons, among them a refusal to believe in anything which he cannot understand, is just the person who falls a victim to the New Age of Faith, which Langdon Davies has recently been discussing with much humour and truth. His conviction is that "no age has been so noticeably an age of faith as the twentieth century." Throwing overboard the teachings of religion because of their incomprehensibility, the populace has rushed madly into the arms of anything put forward by anybody (including "the enormous number of pseudo-scientists masquerading in borrowed plumes") which has confidently professed to be taught by science. For proof just study the origin, progress and results of the Nordic nonsense, from the days of Gobineau, through Houston Chamberlain, and its later preachers in the U. S. A., and then make up your mind whether there is not a good deal in what Langdon Davies says.

In this same connection, surely people must sometimes wonder where that mystic individual "science" resides, of whom they are told in so many manuals—usually the smaller ones—that "science teaches this" or "science tells us that." Carefully analysed, such statements too often boil down into the final precipitate, "I teach this" or "I tell you that." The Catholic can say

that he does know, at least, who is teaching him. But the reader untrained in science is likely to acquire in the way mentioned above quite a stock of inaccurate information as to what is or is not scientific truth, because of his poor choice of authorities. In 1877 Virchow, who was a very level-headed man, in an address at Munich, said that it seemed to him high time to enter an energetic protest against the frequent attempts to confuse the theoretical data employed in the problems of research with actual facts, and the opinions of scientists with established science. Much the same was meant by the late Professor Bateson when he wrote of "giving to the ignorant as a gospel, in the name of science, the rough guesses of to-day that to-morrow should forget." Huxley put his foot down and declared, "The assertion that outstrips the evidence is not only a blunder but a crime."

These untoward consequences spring from the fact that there is no such entity as "science" though there are many sciences. Nor of course is there any centre of authority with power to define and establish its definitions, though Heaven knows dogma after dogma in the last fifty years has been trumpeted as scientific truth and those who opposed it treated with scorn and contumely. Too hard words? Well, here is what Professor Driesch, a very distinguished man of

science, has to say about the domineering temper of scientific dogma. "Indeed things were not pleasant for the few who, when materialism was at its zenith, guarded the tradition of the old, i.e., of the vitalistic biology. People would have preferred to have locked them up in madhouses, had not 'senility' 'excused' them up to a certain point." Still it may fairly be said that science or scientific men are not at all willing to submit to a personal *ipse dixit*, but expect a certain consensus of scientific opinion to take place before a dogma shall be allowed to begin its rule. In spite of the fact that acceptance as a dogma has been in not a few cases premature, there are a number of things scientific which seem to be settled pretty much beyond the peradventure of cavil.

White, and other writers who belong to that class, are never tired of harping on the point that theologians—passing by others for the moment—have been slow in admitting the findings of science. The reply is twofold. First of all, as Murray has recently shown in his *Science and Scientists in the Nineteenth Century*, that scientific discoverers have met with the greatest opposition from their scientific brethren, as witness the cases of Jenner and vaccination; J. Y. Simpson and anaesthetics; Pasteur and Lister in their bacteriological and antiseptic work—with

Darwin, Lyell and Joule in reserve. And in the second place—to be further dealt with in the next chapter—the theologian is well aware, as the whole reading world must be, that it is not uncommon for a theory which, but a short time before, had been proclaimed as the last and most certain pronouncement of science to be jettisoned. It, therefore, does not seem unfair in the theologian to ask that the scientists make quite sure of their ground before they ask him in any way to shift or modify his own.

As freedom for science is demanded, and rightly, why should not freedom be demanded also for theology from the assaults of persons who obviously do not know the first particulars about it? Above all, freedom for Catholic theology? Those outside the faith take for granted that all that was good, and learned, and conscientious left the fold of the Church at the Reformation. Hence their conclusion is that the theology of those who left and of their successors must be immeasurably superior to that of the feeble remnant who stood by the Church. Let us not, then, bother to study Catholic theology, say the scoffers, before attacking it, for doubtless it is safe to assume that it is far worse than the Reformed theology and we know (or think we know) how bad that is. To which I would reply that the Church was robbed of many things at

the Reformation but not her theology, to which she stuck, and no one at this late day should try to rule it out of court. When popular works on science appeal, as is frequently the case, to the theologian to do this, that or the other, they might occasionally remember that there is more than one brand of Christian theology and cast an eye on the oldest and the most carefully elaborated of them—that of the Catholic Church. Were they to do so, they would find many surprises awaiting them.

Chapter VI

ON THE FACT THAT THERE ARE OTHER THINGS BESIDES SCIENCE

This chapter, which I promise shall be very brief, is really in the nature of a postscript to the last. It ought not to be needed at all, and if this book was written for the specialist, it should not find a place in it. But the general reader is apt to be confused by the chorus of minor sciolists (crying for far more than the space of three hours, "Great is Diana of the Ephesians!") and misled into the belief that science is the be-all and end-all of existence—which is simply untrue. One of these writers says that "the only authority is science," and another that "error can only be removed by science and scientific truth." Another writer does not hesitate to assert that the "conflict between science and theology was due to the ecclesiastical self-assurance that theology possessed all the weight of divine authority behind it, whereas science was an impostor of human invention." In all ranks, even in the clerical, there are men less than wise, and it is impossible for me to claim that some stupid person may not

have made use of the phrase here quoted respecting science, though I gravely doubt it. But attention should be paid after all to official utterances, and Papal allocutions during the past quarter of a century abundantly show that Catholics are advised to welcome all new facts from whatever source they come. The first part of the above remark, too, is inaccurate. Catholic theologians with other members of the Church do indeed believe that underlying their work there is a body of revealed dogmas which "have the weight of divine authority behind" them. But, if the writer had considered his words, he would have known that that deposit is not theology, but that theology is the science built on that foundation, and that no theologian ever claimed for his science that it had, in any other way, the weight of divine authority behind it. The loose use of words is unfortunately one of the consequences of not conforming to the rule that terms should be defined before argument is begun.

Again I say that real men of science are perfectly well aware of the limitations of science. The late Sir Michael Foster said of his friend Huxley that, "great as he felt science to be, he was well aware that science could never lay its hand, could never touch even with the tip of its finger that dream with which our little life is rounded."

Huxley himself puts this in his usual forcible way and with a very clear appreciation of the effect that what he had to say would have upon his scientific friends.

> Force and Matter [he said] are paraded as the alpha and omega of existence. This I apprehend is the fundamental article of faith materialistic, and whosoever does not hold it is condemned by the more zealous of the persuasion (as I have reason to know) to the inferno appointed for fools and hypocrites. But all this I heartily disbelieve. It seems to me that there is a third thing in the universe, to wit, consciousness, which in the hardness of my heart or head I cannot see to be matter or force, or any conceivable modification of either, however intimately the phenomena of consciousness may be connected with the phenomena known as matter and force.

But that is by no means the kind of talk we always hear, for the proclamations of "the more zealous of the persuasion" do tend towards the belief that science is able to tackle consciousness and a lot of other things which in reality are outside its ambit altogether. That attitude is apt to irritate the philosopher and sting him to the retort that science had better tidy up its own

grounds before proposing to attend to those of its neighbours.

Dr. Percy Nunn, in a recent presidential address to the Aristotelian Society, alludes to the constant changes of face that have gone on with regard to electricity, most surely a thing within the purview of science. He remarks that "the electric current was first regarded naïvely as the flow of an imperceptible fluid through the substance of the wire; a little later the facts of electrolysis required the idea of a second current going the other way; further discoveries suggested that the current is really a process going on everywhere in the world *except* in the wire; finally it came back into the wire again in the form of a stream of electrons." Although that kind of thing is quite inevitable, he proceeds to point out that it "makes it a little difficult to take those scientific objects seriously."

Du Bois-Reymond, when secretary of the Berlin Academy of Sciences, drew up a list of what he called the "Seven Enigmas of Science." He regarded three of these as transcendental and insoluble by science, and as there was nothing but science in his cosmos, he concluded that we must remain in perpetual ignorance of them. These were the nature of Matter and Force; the origin of Motion; and the origin of Sensation and Consciousness. He thought that science

might yet clear up the origin and maintenance of life, though Lord Kelvin regarded both of those as outside the purview of physical science.

However, the point need not be further laboured. There are many things which science has not reach enough to touch. She has an important niche in the universe to fill, but there are other niches as well. Science can neither tell anything about the other niches nor, above all, how any of these niches came to be, nor even how she comes to occupy one of them.

These several ignorances are as much as the most envenomed theologian would tax science with and certainly constitute the least that science must needs concede.

Chapter VII

ON THE BIBLE AND ON VARIOUS METHODS OF INTERPRETING IT

Nothing in connection with the Church has suffered more from misrepresentation, and is matter for more misconception than this subject of the Bible, and I must try to clear it up as simply as I can.

What is the Bible? It is a various collection of treatises. For the preservation of the older and for the writing of the newer portions, the Church, under inspiration, is responsible. What is the object of the book? To teach man certain things about God and above all how man can come to be with Him forever. That is all, and if anyone goes to that book and tries to use it as a scientific treatise or a complete and exact textbook of history, he is going to the wrong shelf in the library. It is, the Church teaches, the inspired word of God, and she admits, as all must do, that much of it is very hard to understand. The reader fares ill without a commentator, as the eunuch of Queen Candace discovered when he was studying the Prophet Isaias. For

the Catholic, his Church is that commentator, and to that Church he goes when he wants to know how he is to take any particular passage. Nor need I once more tediously rehearse the reasons which lead him to, and confirm him in, that course of conduct. And he has access for his assistance first of all to the great encyclicals of the late Pope Leo XIII, which briefly but completely indicate the attitude of the Church to this question. They are not long; they can be read in, say, an hour quite easily; and they are even translated into English. I wonder how many of those who write against our religion have heard of them, let alone read them. Yet the translation of the most important, the *Providentissimus Dei,* is printed and bound in with each copy of the English translation of the Bible sold in Catholic bookshops. In addition, a Biblical Commission has been set up by Papal authority, which is a body composed of the most learned Bible scholars within the Church, whose business it is to consider and give judgments upon points of difficulty submitted to them.

Observe, please, that neither the encyclicals nor the findings of the Commission come within the term infallible; that is, they might be wrong.

But in view of the sources from which they come, they are very highly authoritative and are not to be discussed save as serious problems in

serious publications where discussion is carried on by the learned. That seems obvious and reasonable, and no Catholic complains of it.

Pope Leo XIII was much influenced in his encyclical by the writings of St. Augustine of Hippo, who expended no little of his boundless energy fifteen centuries ago in considering these very problems which vex some of us. Although science scarcely existed in his time, anyone who consults his works will be surprised at the modern air of the problems discussed by him. With this preface in mind, let us address ourselves to the main question: What are we to think of the Bible?

First of all, then, there are parts of it—how many we will not discuss—which are written in figurative language, or set down in terms commonly used at the times; written in fact as we should write a book which was intended to be understood by people in general. We should write about the sun rising and setting and, if it was a theological treatise, we might talk about the eyes of God resting on men and the responsiveness of His ears to their supplications. But we should know perfectly well that the first reference about the sun was scientifically inaccurate, and that the other two were hopelessly so, since God is a Spirit, and does not therefore

possess those corporeal attributes. And as to figurative language, that is little common in England; it is much more so in the United States, as everybody knows; far more so also in Oriental countries, for the peoples of which the greater number of these books of the Bible were intended.

Does it not seem perfectly obvious, then, that there are parts of the Bible which we may take figuratively? Look at the Parables of our Lord—fables which He often afterwards explained. But there are parts also which are not figurative, and the Pope and Saint Augustine both tell us—again this is common sense—that we are not to depart from the literal and obvious sense save where reason makes that sense untenable or where necessity requires. If it is quite clear and absolutely certain that the literal interpretation of a given passage offends against historic or scientific truth, then we must treat it figuratively and seek its meaning in that direction. But where it seems impossible to square a new scientific idea which sounds brilliant and even convincing with some Biblical passage, that is no reason why we should at once commence scurrying around after a "reconciliation." A Biblical scholar of the Anglican Church once wrote to Clerk Maxwell, the greatest physicist perhaps then living, in the line of electro-magnetism, asking him, the scien-

tist, whether a recent theory of his would help him, the theologian, in a difficulty as to the Biblical account of the creation of light. What Clerk Maxwell said was eminently sensible and amounted to advice not to hurry about "reconciliations" of this kind until at least there was time to tell whether the theory was to be safe from the scrap-heap where so many go. Cardinal Newman was perfectly right when he said that there was something undignified in the sight of a Catholic who was perpetually worrying over theories and striving after reconciliations.

What should be done when an apparent difficulty is met with was pointed out most carefully by Augustine and endorsed by Pope Leo: "If in these Books I meet with anything which seems contrary to truth, I shall not hesitate to conclude either that the text is faulty . . ." Let us break off here a moment to note that the dangers are considerable that this may be the case, for texts were written by hand and there were few copies. It used to be a stock argument with the Higher Critics that the texts available to us were not to be relied upon at all generally, but the researches of the last sixty years have made a great difference in this respect. The results of excavations, of the discovery of the Oxyrhynchus papyri, and other such fresh evidences, have all gone to show

that the texts are much more accurate than was formerly conceded; as regards the Gospels, for instance, I understand that few now doubt their early dates.[1] Still this cause in case of difficulty is to be kept in mind as well as the second one which Augustine enumerates, i.e., that "the translator has not expressed the meaning of the passage"—again a not unlikely contingency.

Finally, Augustine suggests that the cause of the difficulty may be "that I do not myself understand it," which is a reason that ordinary humility will often suggest. Perhaps the gist of the whole perplexity cannot be put better than it is by St. Thomas, in dealing with the question of the work of the "second day" of creation, when he says that

> in discussing questions of this kind, two rules are to be observed, as Augustine teaches. The first is to hold the truth of Scripture without wavering. The second is that since Holy Scripture can be explained

[1] An important example of the verification of an account long denied accuracy is the contention that the narrative relating to Our Lord in Josephus' History of the Jews was a forgery, apparently on the grounds that no Jewish historian would be interested in such a matter. I understand that this view, as the result of recent investigations, is now wholly abandoned and the passage accepted as genuine.

> in a multiplicity of senses, one should adhere to a particular explanation, only in such measure as to be ready to abandon it, if it be proved with certainty to be false; lest Holy Scripture be exposed to the ridicule of unbelievers, and obstacles be placed to their believing.

For the solution of difficulties in the text we have the Commission set up a number of years ago of which Cardinal Gasquet is the head. Its object is to produce by careful collation of all texts the most perfect final version possible. For difficulties of interpretation there is the Commission already mentioned, whose business it is to afford the best advice of experts on difficult passages. Of course the early chapters of Genesis are full of such difficulties and have claimed the attention of Catholic students from the time of Augustine. He spent many years over his great work, *De Genesi ad Literam,* in which most of the modern difficulties have been untangled, some of which will later be presented. Meantime, let me repeat some words of my own uttered over the Paulist radio in New York, which I do not see any necessity to alter:

> Looking carefully at this part of the Bible it seems that the things which we really learn from it are that God created every-

thing, and not all at once, but in a serial manner, so to speak, but that how this creation took place is matter of surmise. We are not told anything about its method. Respecting what are called the Seven Days of Creation, we are told by the Biblical Commission that this term "day" may be taken to mean a period and not one of twenty-four hours, and as to the occurrences of those days, since there has been no definition on the point, surmises are permissible and there have been at least a dozen such, none of which has been condemned by the Church. One learned Catholic Bishop thought that the account was set down as it is for liturgical recitation; another writer thought that it recounts a series of visions accorded to Moses; while a third thought that the Scriptural account is an allegorical drama in six acts, in which the religious duty of worship of One God who has created the world and of gratitude for the magnificent bounty of that creation are inculcated. So that there is much liberty allowed in this interpretation again, flowing from the view that we are not dealing with a textbook of science in the Bible. A further piece of information which we receive is that we are not bound to interpret

> these chapters literally where expressions are patently not used in the strict sense but metaphorically or anthropomorphically, that is, when the actions of the Creator are spoken of as if they were those of a man, which, though ludicrously inaccurate, is yet, within our limitations, about all that we can do. To sum up the findings on this matter, we are informed that since it was not the intention of the sacred author, when writing the first chapters of Genesis, to teach us the innermost nature of visible things, nor to present the whole order of creation in a scientific manner, but rather to furnish to his readers—an Oriental people, be it noted, accustomed to highly figurative language—to furnish these people, I say, with a popular account adapted to the senses, to man's intelligence, and doubtless to the times; since such was the case, we are not bound when interpreting these chapters to seek for scientific exactitude of expression.

Various attitudes are taken towards the Bible to-day. The old Scotch woman's "I believe everything between the two covers!" irrespective of accuracy of translation, holds still in some quarters; and perhaps too the far more ignorant "All rubbish!" although this was commoner half

a century ago and now is usually only heard from the tops of soap boxes. There is of course the far more annoying superior person who alludes to it as "Deeply interesting folk-lore." The Church takes it as inspired, but handles it as an ancient document, written for people of other ages and of other lands and ways of thought, and surely in so doing is exercising ordinary common sense.

Chapter VIII

On Certain Mistaken Ideas as to the Attitude of the Church

1. Chiefly Astronomical

This chapter and its immediate successors are to be devoted to the clearing up of various controverted astronomical, cosmological and biological points in connection with the reactions between the Church and science. Notably certain fables, though they have been exposed time and again, will be dissected because they still find ready acceptance in modern books and therefore must be dealt with here, lest otherwise it be supposed that they are solid truth.

But before taking these up, it may be well to clear the way for them by offering a few suggestions on what is called the warfare between religion and science. If the erudite but unimaginative Dr. White could have absorbed them and profited by them, the world need not really have been burdened with the greater part of his work at all.

In the first place, to fail to see that whilst this

is not the tenth nor the fifteenth century, neither were the tenth, thirteenth or other centuries duplicates of this one in which we are living, is pure historical astigmatism. They hadn't its knowledge; they hadn't some of its vices, perhaps not even some of its virtues; and most certainly they hadn't its ideas on many, and perhaps most, topics. For example, in those early days, if you thought that violent tortures were not punishment enough, the proper thing was to burn the persons who differed from you on serious points of opinion, and that was as true of Calvin who burnt Servetus, the discoverer of the pulmonary circulation, as it was of any Papal inquisitor. Horror of the latter is dinned into our ears from every anti-Catholic coign of vantage, but we seldom or never hear of that act of Calvin. A lot of prominence is given to the burning of Bruno and the others, but somehow or other little stress is laid on the dealings of gentle Cotton Mather and his associates with the Salem witches.

Nor are we often reminded that the last witch was burnt in Protestant Scotland, at Dornoch, in 1708. Burning at the stake is death by torment, but hardly worse than the *peine forte et dure* wherein the victim was laid more or less naked on the rough ground, with a door on top of him on which weights were piled until he expired, like a beetle under the foot of its oppres-

sor, but with far less merciful swiftness. The last victim of this revolting method of execution suffered after the Cambridge Assizes of 1741, and that penalty was abolished by law in 1772. Margaret Clitheroe, a woman of gentle birth, was thus put to death (a large stone, in addition, having been placed under the centre of her back) in the last years of the sixteenth century for the crime of harbouring a Catholic priest and refusing to say anything publicly about it. There is no object, of course, in pursuing this *tu quoque* argument at any length, but let us remember that the Catholic persecuted—if you prefer that word—because he was convinced that the person, in a day when all believed in the same doctrine, who tried to pervert faith was as pernicious a character as the creature who would put cholera bacilli in the water-supply of London or New York. But for the Protestant, loudly professing his undying interest in freedom of thought and in private judgment, it was illogical to persecute—you must now permit me to use his favourite word—those who dared to exercise that right of judgment and get different results. Again let us remember the differences in time and opinion. No one who knows anything about history can doubt that both Calvin and Torquemada, if they could revisit this world, would find themselves astonished at our abandonment of puni-

tive methods, of which both approved, and equally astonished at our mild attitude towards religious differences of opinion and our severe attitude towards the alcoholic beverages, which neither of them would have condemned. They had their ideas; we have ours. Perhaps they were right or more right than we are, perhaps not. It is a matter of opinion anyhow, and we ought not to be so perfectly certain that in all things we are better than that publican of the fourteenth or fifteenth century.

So much in the way of plea that one must try to understand the spirit of the time if one would read the history of any period with any kind of intelligence. This principle applies most particularly to the history of what is called, with somewhat heady rhetoric, the warfare between religion and science. That this age of history had its own knowledge and, still more important, its own ignorance, is another point which we must not, though many do, or pretend to, miss. Really it is no use to blame the Catholic Church because men of science, who were largely clerics (for the obvious reason that most persons of education were) did not sooner discover the secrets of nature. Take the case of Fallopius, a man who lived from 1523–1562, and made his mark in anatomy, for the Fallopian tube—a sufficiently noticeable object—and the Fallopian

aqueduct—by no means so easy of observation—are named after him. His reputation led him to be asked to account for the existence of fossils, and instead of showing good sense and saying that he did not know, he said they were stones "produced by the tumultuous movements of terrestrial exhalations"—which of course is pure nonsense. But it has actually been suggested that he made this absurd statement because he was afraid of what the Church would do to him if he told the truth. The absurdity of the assumption that he knew what fossils were all the time, and did not dare to say, becomes evident on looking up and finding that a century or more passed before the secret was discovered by Nicolaus Stensen, a man who afterwards became a Catholic bishop. Curiously enough, he was also a noted student of anatomy, and his discoveries were of much more importance, too, than those of Fallopius.

Stenson set down his ideas with proper modesty and the reward of his care not to overstate his case is to be pilloried by the *Encyclopædia Britannica* as doing it out of fear of offending orthodox opinion. If Stenson had remained the Lutheran he was born he would doubtless have been praised for his scientific caution, but "common form" demands that when you are dealing with a Catholic man of science he must be pictured in constant terror of what his Church is

going to do to him, and from that "form" there seems to be no escape.

Further, fairness requires that, preceding criticism, an attempt be made in good faith to understand the position of the man in question, his mental attitudes and the mould of his thought. For example, Buffon, many think, was an evolutionist but very cautious in coming to a conclusion, and from the scientific point of view very properly so. In explanation of this attitude he says that revelation assures us that all things have equally participated in the grace of creation. For this he is rebuked as "palpably insincere" by a recent scientific writer, who obviously thinks that Buffon is dropping this in here as a sop to the Church. It is quite impossible to be sure what Buffon really had in his mind, but he says clearly what any Catholic man of science writing to-day would, that whether creation be special or mediate, i.e., evolutionary, every living thing none the less shares in the grace of creation, since creation in either case is the work of a mandate or fiat of the Creator. Why then accuse Buffon of trimming?

With these preliminary observations on the method of dealing with controverted points in connection with the reactions between the Church and science, let us now turn to their specific consideration and commence with astrology. Why

did mediaeval Popes employ astrologers and follow their advice? They did, I admit—and so did every potentate of the time, Catholic or Protestant, though that is a poor excuse. A great city like Florence led the way even in appointing a municipal astrologer, just as to-day we have medical officers of health on city payrolls. Of course, a complete explanation of it all is not especially difficult and one must be briefly attempted here, though to discuss the history of the expulsion of astrology from Europe and its return is impossible for lack of space. When astrology did come back it swept in like a tidal wave, and Kepler and Tycho Brahe, both Protestants and both great astronomers, drew horoscopes with the best of its devotees.

Astrology gets its start in the unquestioned fact that the weather exercises an effect on one's constitution. "There are days when it flows like water and days when it comes out like treacle," as a journalist remarked, although he was speaking not of life but of copy. And these seasons of joy and depression frequently correspond with brisk, pleasant weather or fogs and damp respectively; in one word, with the sun and its smiles and frowns. If the sun exercises such dominion, then does not the moon? Certainly! Is not lunacy standing evidence in support? In that event, how question the existence of jovial, mer-

curial and saturnine dispositions, all supposed to be due to the influence of the planets indicated? One step further, and the day a person was born will tell what planets affect him and whether for good or ill. But if that be so, we are likely to be in better condition for the transaction of some important piece of business on one occasion than on another. Let us therefore postpone it to a favourable occasion.

But how are we to know that the hour has struck when the various influences of the stars combine to put us at our best? Ask me, says the astrologer. And so the vogue of the horoscope and astrology begins. *Sapiens dominabitur astris* was the motto, though the *locus classicus* for it has never been discovered. Man has free-will that is not subject to control by the stars. To be sure, but they can help or hinder him in his projects; let him see to it that they act as an aid and not as an obstacle. Here again, from the given premises, the conclusion is perfectly rational. And the premises certainly were not unreasonable in view of the condition of knowledge at that day. In our own time the late Marquis of Bute accepted them, or at least used astrology as a guide. Of course the fact that he was a Catholic discredits this evidence with some, but that does not apply to the late Dr. Garnett of the British Museum, a man of considerable

reputation in his own day, who held the same ideas. I do not want to suggest for a moment that these men were correct. What I do wish to urge is that the whole idea could not then have been so hopelessly foolish as it is apt to seem to us offhand now, when substantial men could accept it, and that a charge that the recipients of astrological advice were necessarily all feeble-minded cannot be sustained. Plenty of people to-day employ astrologers and probably astrologers far less adept in the pseudo-science of the heavens than their predecessors.

From astrologers to comets is no long distance, and for a moment we must touch upon one of Draper's favourite fictions, viz., that Callixtus III exorcised Halley's comet in 1456, a fable still circulating in some quarters. White has at least the discretion to omit that particular tale, though he has much rubbish to say about comets. White first tells us that St. Thomas Aquinas thought they were indications of disaster, and then goes on to couple with that statement references to the fact that a recent Pope has commended his works to our most special attention. Either he did not know, or did not think it worth mentioning, that abundant warnings had been issued against Thomomania, that is, against accepting every idea that the saint set down as correct. It is the scheme of philosophy in the large which the saint

inaugurated that is commended, not his incidental mistakes, such as his acceptance of spontaneous generation (yet to be dealt with), which are bound to occur in a work composed in the childhood period of science. The reply to Draper's tale of exorcism of Halley's comet in the *Catholic Encyclopædia* is so much to the point that I shall not attempt to alter it. It is true that Halley's comet was visible in the year in question but that is all. The stories of the victory over the comet by the Pope and other rubbish also given by Draper are pure invention. This is how the three black crows were evolved.

> The fable was started by Laplace, who invented the "conjuration" though he tried to atone for his untruthfulness by omitting the phrase in the fourth edition of his *Essai philosophique.* The atheist Arago changed the conjuration into excommunication. Vice-Admiral Smyth added the exorcism, Robert Grant the anathema, Flammarion the "malefice," and finally John Draper, the malediction. Here the vocabulary came to an end.

Perhaps the reader may grow tired of the repetition of the point, but really White ought to have known that the holding of mistaken ideas on scientific matters (in which the men of science

of the day shared) by persons professing religion, whether Catholic or Protestant, is not an instance of a conflict or of a warfare between religion and science but of a gradual emergence of society in general from a condition of ignorance. Of course, if he had been guided by that principle, his book would never have been written.

And now I suppose the perennial topic of Galileo must be threshed out once more. This is one instance of which the anti-Catholic world will not let go, as Newman remarked years ago, and Heaven knows it makes all and more ado over it than it is worth. But I shall be very brief. Huxley thought and said that the Pope and the Cardinals had rather the best of it in this controversy. Not so with Catholic writers, who freely and frankly admit that a grave mistake was made. That the principle of infallibility was in no way concerned is admitted by all, emphatically so by the Protestant astronomer Procter in his consideration of the matter. Outside authorities also admit that Galileo was a tiresome person, nicknamed in his early days "the wrangler," and that the real ins and outs of his case are far from what they are usually held to be. Take the following quotations from Whewell, a Protestant, as are all the authorities he quotes:

Leibnitz, Guizot, Spittler, Eichorn, Rau-

> mer, Ranke, and almost all persons who have studied the facts, have at least done justice to the Church; that Galileo trifled with authority to which he professed to submit, and was punished for obstinate contumacy, not for heresy. This celebrated event must be looked upon rather as a question of decorum than a struggle in which the interests of truth and free enquiry were deeply concerned.

Numbered with those "who have studied the facts" certainly Draper cannot be, nor those who copy him or his copyists, and make statements like this: "he [Galileo] died in 1642, the prisoner of the Inquisition. He was not allowed to make a will, and he was denied the right of burial in consecrated ground." Again, in the report to the French International Congress of Free-Thought in 1904, occurs this reference, *"Galilée emprisonné, torturé peut-être."* Free-Thought would appear to claim the right to speculate freely as to possible additions to historical events and then to set down its guesses as facts, tagged with a *"peut-être"* by way of qualification. See how a plain tale can uncover this collection of shams. The Congregation did unquestionably set their sign manual to an inaccurate scientific statement and force Galileo to adhere to it.

But that Galileo had proved his case, as Draper and White assert, is simply not true. His "proofs" combined did not amount to a demonstration, and one of them was quite wrong. The scientific issues of the case were not settled for one hundred years after his death. As late as that, too, a certain Abbé Irailh coined for him and set in circulation the remark, "And yet it moves." "The most impressive object to-day in Florence is the model of the finger of this great astronomer as he held it up before the examiners of the Inquisition, with the words, 'It still moves.'" So quite recently wrote a most distinguished exponent of science in the United States. It is a pity to spoil a good story, but truth must out though the "impressive object" lose its impressiveness in the process.

As to the other points, he was never tortured in any way, nor was he blinded as has been asserted, though it is a fact that he became blind from natural causes some years before his death. He was technically a prisoner for many years; but what anguish did that cause him? He spent twenty-two days in the buildings of the Inquisition, where his "prison" was a large and handsome apartment belonging to one of the officials. His subsequent places of confinement were the houses of his friends, where he lived with them as a member of the family, and afterwards his

own villa near Arcetri. None of these fits the description, though they have been called dungeons. The charges that he was refused the sacraments and Christian burial are not true, since he received not only all the sacraments of the Church but even that special favour, the Papal benediction *in extremis,* from Urban VIII. He was buried in his own parish church of Santa Croce in Florence and a monument stands there erected to him. As to his will, did such a refusal occur, it may have been due to the fact that he had none but illegitimate children.

The cases of Copernicus and Bruno serve as mere appendages to the Galileo incident. A previous chapter dealt with Copernicus. While Bruno was burnt, it was not for anything that had to do with scientific controversy but for teachings like these: that Jesus Christ was not God but a particularly skilful and successful conjurer or magician; that the Holy Spirit was the soul of the world; that the devil would be saved—statements which caused a Protestant historian to remark that "he had not a trace of religion." I am not condoning the burning of this unhappy man, but that was then the recognised penalty under the law for such offences. It scandalises us, but on the other hand were the jurists of those days to be confronted by condi-

tions as they are to-day, even in some civilised places, they would be startled too.

Much has been made in some quarters of the length of time it took for the anti-heliocentric judgment to be expunged from the findings of the Inquisition. Long before that time, the question had been allowed to be freely debated by Catholic scientific men and even taught as a possible explanation. No doubt the Congregation was anxious to feel quite sure that science had made up its mind irrevocably on this matter before altering the decision arrived at even mistakenly by its predecessors. With all the additions and corrections which the years have witnessed in the findings of science, they seem to have acted more wisely than has been allowed by the body of their detractors.

As a colophon which has been purposely reserved as a conclusion to this chapter, consider the following statement of Whitehead of Harvard and then meditate upon the mischief wrought by Draper and White and their satellites: "In a generation which saw the Thirty Years' War and remembered Alva in the Netherlands, the worst that happened to men of science was that Galileo suffered an honourable detention and a mild reproof, before dying peacefully in his bed."

Chapter IX

ON CERTAIN MISTAKEN IDEAS AS TO THE ATTITUDE OF THE CHURCH

2. Chiefly Cosmological

What exactly does the Church teach is meant by creation? It teaches that God created the universe, including our world, by His own free-will and, prior to that, there was nothing material in existence. Aristotle held to a tenure of eternity for matter; St. Thomas held that reason could not disprove the possibility of the creation from all eternity of matter by God. Of course from revelation he acquired and taught that the material universe was not created from eternity. However, the point of real importance to be noted is that neither matter nor any other finite or imperfect form of reality could be credited with self-existence; for by definition the self-existing must be perfect, infinite and therefore unique.

Matters of greater difficulty to others, though they should not be to Catholics, are the questions raised by the account of the creation of the world

in the early chapters of Genesis. Now as concerns these, let it be noted that the writer of that account had two motives in view. The first and most important was to make it clear to a people living in the midst of polytheists that there was but one God and that He was the Creator of all things. The other and much less important motive was to give an account of the story of creation within the compass of the time and people for whom it was composed. The Biblical Commission in a general instruction which recommends that the account be considered as "historical and popular" makes it quite clear that the word "days" can be taken to mean a space of time indefinitely prolonged, since we are all living in the seventh "day" at this moment, and expect it to continue for an unknown length of time. Otherwise it does not say how this element in the narrative is to be understood.

Next to be considered is the order of succession in creation. Here again no definite instruction has been given and at least a dozen interpretations have been proposed, none of which has been condemned, and any of which may be held. There is the concordance idea, wholly rejected by some, which, however, so strongly appealed to Romanes, and in his agnostic days too, that he did not hesitate to say in *Nature* how much struck he was by it. There is the explanation

of a learned bishop that the account received its present form for liturgical recitation. Possibly the favourite analysis of its intentions may be tabulated thus:

DAY	REGIONS	DAY	OCCUPANTS
1.	Day—Night	4.	Sun (for Day)—Moon with stars (for Night)
2.	Sea—Sky (Air)	5.	Fishes (for Sea)—Birds for Sky (Air)
3.	Land under water Land over water, with concomitant vegetation	6.	(No occupants for land under water, because insignificant or unknown) Animals and Man for Land over water

Generous space has been given to this matter because the rather numerous interpretations proposed make together a fine instance of the freedom of interpretation allowed to Catholics on all questions outside the regions of defined doctrine.

Next in order shall be the consideration of the word "special" with reference to creation. A recent writer in a work entitled *Reflective Thinking,* where the subject is carefully considered, quotes two sayings of Linnaeus: "a pair of each particular species was created" and that "we reckon as many species as the Infinite Being created in the beginning." Very properly he makes the point that those phrases sum up the position of those opposed to after, supplementary acts of creation. Linnaeus was a Protestant, but

I am not concerned to deny that the same position was taken by many persons, Catholic as well as Protestant, in the earlier days of science. What I am concerned to get before the reader is the fact that, however this same stand may be found, latent or expressed, in Catholic works, it is not one which it is incumbent on a Catholic to hold. Of course an Omnipotent Creator could have used this method in executing His creative purpose. But if one certitude arises amongst the myriad uncertainties that baffle us here, it is that this is not the case. A Catholic is perfectly free to accept and hold the idea of derivative or mediate creation, i.e., action by and through natural laws, the source of whose informing energy is a similar divine fiat. And in the light of that belief no theistic objection can be lodged against transformism, as will appear later.

When did all things begin to happen? In other words, what was the date of the creation? Draper says that the Church insisted that the earth is only six thousand years old. The truth is that we have here again an idea held at one time by many, perhaps most, persons of all sorts and descriptions, but never "insisted" upon in any way. Charity leans to the supposition that Draper may have got his authority for this statement from the *Martyrologium* for Christmas day, which does contain something to that effect. But

that book is in no way authoritative, still less binding, for it contains obviously, and even admittedly, inaccurate statements, such as those about Barlaam and Josaphat, a fact that is perfectly well known in the religious houses to which practically its circulation is confined. And, as the *Catholic Encyclopædia* says, at least two hundred dates have been suggested, varying from 3483 to 6934 B.C., all of them sponsored by those who agree that the Bible can settle the matter for them. Not to delay longer over this point, let me cite from the same authority this final remark: "On such questions we have no Biblical evidence, and the Catholic is quite free to follow the teaching of science."

What is the shape of the earth? Kipling has a story of *The Village That Voted the Earth Was Flat.* There is actually a town in the United States where this has been done, and instructors of youth in Zion City must teach that "the earth is flat like a pie, surrounded by a circle of water, enclosed by an outer circle of impenetrable ice," or find work elsewhere.

Draper would have us believe that some such notion was the definite teaching of the Church, and White agrees with him. It is a quite inaccurate assertion which I suppose is founded upon the story of St. Virgilius, an Irishman of the eighth century who died as Bishop of Salzburg

in 789, and was canonised by Gregory IX in 1223. For teaching the sphericity of the earth he was denounced by no less a person than St. Boniface to Pope Zachary, who ordered a council to be called to admonish Virgilius. We do not know what happened exactly, neither do we know the precise terms of the accusation. But we do know that the chief allegations turned out to involve the questions of original sin and universal redemption, and referred much more to the people of the antipodes than to the contour of the earth. In any case, Virgilius cleared himself and died a bishop in the odour of sanctity. Draper probably never heard of Virgilius, and White, although the better scholar, yet only had part of the case before him. He is wholly wrong in saying that one of the reasons for the burning of Cecco d'Ascoli was his teaching that the earth was round. Dr. Wedel, who has carefully examined this case, gives the counts against Cecco as detailed by the most accurate historian of the occurrence, and no mention is made of anything of the kind.[1] The probabilities are all against it,

[1] Perhaps it may be well to close this matter by stating that the unhappy Cecco was accused of holding the following heresies: (1) That malign spirits could be compelled by astrological conjurations to work marvels for man. (2) Determinism or the denial of free-will. (3) That Christ's birth, poverty and death had been under the rule of the stars. Not a word about the sphericity of the earth.

for it was in 1327 that Cecco went to the stake, and long before that Albertus Magnus had not been called to account for giving an elaborate exposition of the sphericity of the earth, which, it is claimed, led to the discovery of America. So much for Draper's assertion that this discovery caused the greatest consternation in Catholic circles.

While St. John Chrysostom and others held that the earth is flat, the spherical theory was championed by Clement, Origen, Ambrose, Basil and Gregory of Nyssa (331–495), who at this early date brought forward, so the *Catholic Encyclopædia* says, "hypotheses which come very close to the modern theories of rotation." Augustine declared that the doctrine of the sphericity of the earth in no way conflicted with Holy Writ, and his was the dominating influence, in the West at any rate, until the time of St. Thomas Aquinas.

Let us now turn our attention to the question of the Flood. That traditions of a Flood are the property of many peoples seems to be taken by some to signify that there never was any occurrence of the kind—surely a curious perversion of thought. That various parts of the world have seen many great floods is certain, and the legends may refer to quite different incidents. The Indo-European peoples form an exception,

for they do not seem to have had any such traditions. This is not the place to speak of the Babylonian, the most important of them all. The only point needing comment here is the question of the universality of the Flood. Naturally, that would be taught in a day of implicit reliance on literality, but it has never been a teaching required by the Church. Fr. Hull, S.J., very aptly points out that long and careful discussion carried on by the learned, unhampered by the popular flurries on the subject which do so much to upset, has led to a view of the Flood not required, it is to be noted again, by the Church, but which appears under imprimatur (the imprimatur, it will be observed, has its uses). Its most important points are these:

> We may conclude therefore that Moses obtained the account of the Flood from the tradition handed down by the descendants of Noah, at first no doubt by oral tradition, later on by writing, and that the Babylonian parallel, derived from the same oral or written tradition, was gradually debased by the idolatry of the times. . . . it is probable that the Flood did not cover the whole world, though it is very likely that, with the exception of Noah and his family, the whole human race was destroyed.[2]

[2] Fr. C. Baillon, S.J.

It is much more than probable that the whole world was not covered by the Flood, which must have happened before mankind had yet dispersed over its continents—for there was such a time—and the destruction of the race then living been practically complete. Another work says:

> There appear to be certain difficulties within the Biblical text itself which militate against the view that the Flood destroyed all mankind but the family of Noah; for we read that Jabal was the father of such as dwell in tents, and that his brother Jubal was the father of such as handle the harp and pipe; phrases surely unintelligible if all their descendants were supposed at the time of the author to have been drowned in the Deluge.[3]

Perhaps note should be made that the ages of the Patriarchs need not be taken literally, though it would take more space than is available here if an effort was made to treat that subject adequately.

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[3] H. J. T. Johnson.

Chapter X

On Certain Mistaken Ideas as to the Attitude of the Church

3. Chiefly Biological

As there was a time, all will admit, when there was no such thing as life on this earth, the question arises: Where did that life come from? Some very distinguished men have suggested that the first living germs may have sifted down to earth from some other planet, just as cocoanuts washed up on a newly risen coral island take root there. To begin, whether life, as we know it, exists on any other planet, or whether it could possibly survive the awful journey through the cold of space to reach our earth is beyond our present ken. Nor would that theory be a solution of our question, for regardless of where it was first born, we should still have to ask how life arose. Again, is the difference between living and not-living things one of degree or of kind? Is there a specific difference between the sparrow and the stone? Is biology a separate science or is it only a branch of chemistry and physics?

Thirty or forty years ago many scientists would have answered that biological difference is only one of degree and that everything in life could be explained by chemistry and physics. Not so to-day, for the pendulum has taken a considerable swing.

The curious and inexplicable thing in this connection is the way some persons seem to think that, if the so-called anti-vitalistic theory were ever proved, a deadly blow would be inflicted on religion. Nothing could be more distant from the truth. Spontaneous generation was an acceptable thesis to many up to very recent years; and there are still those who think that this form of genesis may be going on all round us, undetected. Nevertheless, the scientific world is just about a unit, since the proofs brought forward by Pasteur show that no shred of evidence exists for anything of the kind. That is as far as either proof or disproof has been able to go. In the time of St. Thomas everybody believed that life did originate directly from not-living matter, i.e., in spontaneous generation, yet none of them found his faith upset in any way by that belief. Avicenna, the Arabian commentator on Aristotle, who differed on this point from St. Thomas, declared—after the materialistic method—that living came from not-living matter by the mere operation of natural laws. The

amendment put forward by St. Thomas held that originally the powers whereby living things emerged from matter were an endowment from the Creator. And the approved teaching to-day is the same:

> The Church teaches that life as well as every other form of activity must be traced to God as its ultimate source, and as the fount and well-head of created being with all its modifications. But whether the first animate thing that appeared in the world received its life from Him by a direct creative act, or through the interplay of powers or properties *which he had already communicated to matter*—that is a question that she leaves perfectly open. She allows us full freedom to choose between these alternatives as scientific evidence may direct.[1]

The Catholic would go further and agree (with Boodin) that "of all philosophies materialism makes the greatest demands upon man's credulity," and that the most satisfactory explanation is the one which declares that life in one way or the other came into existence at the will of the Creator, which physical science is certainly incapable of disproving.

[1] Sheehan.

The question of the origin of life leads to that much debated subject—Evolution, or Transformism, which is a much better name. Not much time will be spent on it, for the plausibility or the reverse of the doctrine of transformism is not to be debated here, nor need we delay long over the question whether it is a theory or a proved fact. Many hold the latter view; but others, like Millikan, tell us that it never can be proved—by experiment I take it. If well-trained scientists—Millikan is not the only one—persist in contradicting a thesis, then that thesis cannot be said to be proved in any accurate sense of the word. Proved or unproved, what is the teaching of the Church in regard to the theory of transformism? I have seen in newspapers, and heard from the lips of educated men of the world who have travelled widely, the astounding statement that Catholics are not so much as allowed to discuss the subject of evolution! Considering the number of books which have appeared on the subject bearing Catholic imprimaturs, this misconception is about the most absurd that can be imagined. There is absolutely not one word of truth in it.

On the teaching of the Church I shall appeal again to the manual of Archbishop Sheehan, which is intended for the use of Irish Catholic

school children and may be taken to be rigidly orthodox.

> The Church, while teaching as of faith that God created the living things from which all existing plants and lower animals are descended, leaves us free to hold either the theory of Permanentism or the theory of Theistic Evolution. According to the former, God by a direct act created each species separately; according to the latter, He caused some or all species to develop in course of time from one or more directly-created stocks, or from inanimate matter. The Church condemns as contrary to faith the theory of Materialistic or Atheistic Evolution held by Haeckel and others, which denies or ignores the existence of a Personal God, and claims that life in all its forms has developed under the operation of blind forces or causes.

Dozens of other similar statements could be cited from Catholic theologians, but the above which is official is sufficient, and surely all reasonable men will agree with the latter paragraph.

A recent work entitled *Reflective Thinking* very properly argues that evolution is not self-explanatory. Whitehead most truly says: "a thoroughgoing evolutionary philosophy is incon-

sistent with materialism. The aboriginal stuff, or material from which a materialistic philosophy starts, is incapable of evolution." His argument, which is too long to be quoted in a brief manual like this, should be studied in the setting of the book itself. To anyone sincerely desiring to probe matters to the bottom who is not afflicted with what Fr. Wasmann, S.J., a most distinguished biologist and theistic evolutionist, calls "Theophobia," the Catholic doctrine above enunciated will prove to be the only full and satisfying answer. For example, the evolutionary theory, as usually formulated, postulates the existence of a world of unicellular organisms at an early period. These organisms, on the showing of Weismann, were potentially immortal, for death is the price which we pay for having a body, as somebody puts it. Nothing in the way of natural selection could well have been at work, and if there had been, it is not easy to see why it should urge the unicellular on to multicellularity. What did? Creative impulse answers that question, and there is no other intelligible answer known to me.

"That is mysticism," I suppose, will be the response. Well, have it so, but then please explain the thing unmystically. Orthogenesis, the urge of an internal force, is an alternative explanation quite fashionable with some to-day,

but branded as "mystical" again by others. Now those who hold that view must tell us where this orthogenetic principle came from. Turn which way you will, the Catholic explanation does not sin against science nor against common sense, as the materialistic explanation does. Fr. Wasmann, S.J., a man of science who is also a member of a strict religious order, shall end this discussion:

> If we assume that God is the creator of all things, and that the world created by Him had evolved independently and automatically, we have actually a greater idea of God than if we regard Him as constantly interfering with the working of the laws of nature. Let us imagine two billiard players, each having a hundred balls to direct. The one needs a hundred strokes in order to accomplish his end; the other, with one stroke, sets all the balls in motion, as he will. The latter is undoubtedly the more skilful player. St. Thomas Aquinas stated long ago that the force of any cause was the greater, the further its action extended. God does not interfere directly in the natural order where He can work through natural causes. This is by no means a new principle but a very old one, and it shows

> that the theory of evolution, as a scientific hypothesis and theory, as far as it can be proved, is perfectly compatible with the Christian theory of the origin of things. According to this view, the evolution of the organic world is but a little line in the Book of the Evolution of the whole Universe, on the title-page of which still stands, written in indelible letters: "In the beginning God created Heaven and Earth."

Another charge drawn up by White, which proclaimed that the Church had done deadly injury to the cause of learning by strictly forbidding the dissection of the human body, was based by him on a Bull of Pope Boniface VIII of 1300. Dr. Walsh has shown that the Bull in question did nothing of the kind, for it related entirely to a custom which had grown up during the Crusades. Crusaders, like other persons, had a fancy for being buried near their own homes, and comrades would promise, in the event of their death, to see that this was done. It was not easy in those days to embalm or otherwise preserve bodies, and the custom grew up of boiling off the flesh and taking the bones along home. The Pope thought it was an unseemly method and forbade it. He may have been right or wrong, but that is how it was. Baffled in that respect, White alleged that this Bull was used

as a cover to prohibit the use of cadavers in the study of human anatomy. That is nonsense, for Mondini, one of the first to perform dissections, performed them in Bologna in the second decade of the century of the Bull in question. Subsequently many Papal physicians and surgeons were also anatomists and published their writings on the subject under the very noses of successive Popes. Stenson, an anatomist of great distinction, was made a bishop, not of course on that account, but it cast no shadow over his orthodoxy.

Take one further incident, from the life of St. Francis de Sales. When a young man of most holy life studying law at Padua, he was so near unto death as to have received the last sacraments. He expressed the wish to his tutor that his body should be handed over to the medical school for the purposes of dissection, in order to lessen that much the horrible scenes of body-snatching which were a disgrace to the city. He recovered, and in making the speech of laudation conferring on him the Doctorate, Panciroli, his professor, alluded thus to the occurrence: "Humane, charitable, compassionate, even to the length of bequeathing your body to the public welfare when you saw yourself at the gates of death."

No scholar can excuse himself for believing

this tale that the Church forbade dissection, yet it still finds its place held for it in White's work with the companion fable that the Church forbade the teaching of chemistry. That companion story is based upon a complete misunderstanding of a very proper proceeding of the Pope, instituted to protect innocent people from charlatan alchemists whose one idea was to get hold of their money. Those who desire to see White's errors on these topics, which are unending, exposed may be recommended to read Dr. Walsh's work, *The Popes and Science,* which they will find very interesting as well as instructive. That work contains complete answers to many of the fables that infest anti-Catholic books and is one long answer especially to the arch-fable that the Church and its rulers are necessarily hostile to science.

Chapter XI

On Certain Mistaken Ideas as to the Attitude of the Church

4. Mostly Anthropological

In the account of the creation of man in Genesis distinct mention is made of a dual operation, the making of his body and the infusion of his soul. Both St. Augustine and Cardinal Newman lay great stress on this, since nothing of the kind is mentioned regarding any other part of the creation. We shall consider them separately.

The Vulgate says that man's body was formed *"de limo terrae,"* rendered in the Vulgate, the "slime of the earth," and in the Authorised Version, "dust." It little matters, as slime is wet dust and that is precisely what man's body is, consisting as it does of a large quantity of water and varying amounts of some twenty odd chemical elements, the commonest constituents of the crust of the earth. It is worth noting that the writer of Genesis, a man wholly ignorant of science, is the author of that observation which is not one that, so to speak, leaps to the eye. An

American man of science has recently expostulated with theologians for trying to make people believe that the Creator actually shaped a figure of clay into which to instil the breath of life. That has never been Catholic teaching. Augustine says that to claim that God with corporal hands made a figure of earth is *"nimis puerilis cogitatio"*—too silly an idea to be entertained. Nor has the Church ever defined what is meant by the "slime of the earth." The evolutionary view is that man was a new species sprung from some lower animal stock—"probably anthropoid," it used to be said. There is no doubt that his anatomy does very strongly suggest such an origin, but that suggestion cannot, save by abuse of language, be described as *proved*. This change in his constitution is commonly explained as due to the slow accumulation of small variations—a thing to me positively incredible on purely scientific grounds.

The other theory that a process of mutation produced it is scientifically acceptable but suffers from the disadvantage that it never can be proved, since there is no way to register the birthdays of mutations. What has the Church to say to that suggestion, which has been made from various quarters? Its teaching may be given here in the words of Sheehan. After stating that belief in the creation of Adam by God is required,

he continues: "(1) If the proof were forthcoming to-morrow that the body of the first man was evolved from the lower animals, it would not be found to contradict any solemn, ordinary, or official teaching of the Church." Then he goes on to show, under a second and a third head, that there can be no possible objection to the use of this idea as a working hypothesis, but that, until it is established as a fact, the Church will go on teaching the direct creation of Adam's body by God. "In thus following the immemorial practice of the Church, never to reject the old in favour of the new and unproved," the action of Catholic teachers "must commend itself as reasonable or prudent even to those who are not of the faith." "There is no intrinsic impossibility, not even improbability, that God should not have used an existing animal organism as the body into which He infused the spiritual soul at the production of the first man."[1] This is quoted from a recent work published under Archiepiscopal imprimatur, and there we may leave that part of the question.

As to man's soul—his spiritual part—the Church teaches that each human being's soul is a special creation by God. Science certainly cannot disprove that this is the source of the soul.

[1] Baschab.

Further, the proposition that the intellectual part of man is derived from that of the beasts, apart altogether from reasons drawn from revelation, does not commend itself to all. The upshot of that belief, Darwin admitted, was to lead him to doubt if he had any right to decide, with a brain derived from that of an ape, whether there was a God or not. It is perfectly obvious that if he was unable to come to a decision on that point for that reason he was equally incapable of coming to a valid conclusion on any topic whatever, and thus must commit intellectual suicide.

How long is it since man first appeared on the earth? Obviously men of science cannot answer that question, for their surmises run from 500,000 to 25,000 years, which makes it clear that their findings are nothing but more or less intelligent guesses. At any rate, the Catholic Church is not tied to the B.C. 4004 which was Ussher's guess, "based on two assumptions," says Sheehan, "(1) that the ages of the patriarchs are correctly given in existing texts of the Bible, and (2) that there are no gaps in the list. Both assumptions are questionable." Catholics then may await with patience for something like unanimity to be reached—a very long way off at present—on the part of anthropologists and geologists on this matter of chronology.

Science teaches the unity of the human race;

the Church agrees as far as the human race as it now exists is concerned. But it puts no ban on the idea that there may have been earlier races of mankind, perhaps without a supernatural destiny, pre-Adamites in fact which died out leaving no traces behind.[2] The pre-Adamite theory condemned a number of years ago held that there were men not of the race of Adam still on earth.

The character of these early men remains to be discussed. Science shows them to be simple primitive savages but always human[3] in every respect, and the Church has nothing to say against this description. What then about the perfections of Adam? And how about the Fall? The term perfection, which may be used in more than one sense, is of a spiritual character when applied to Adam in the teaching of the Church, and refers to the perfect subjugation of his lower nature to his reason. To treat him as a person endowed with great knowledge—scientific, for example—is to entertain a supposition which may be, but probably is not, true. If he ever possessed such knowledge, it went too with his

[2] Wyman.

[3] I hope it will be understood that discussion of contested fragments like the Trinil and Piltdown bones cannot be undertaken in a book of this scope. I am dealing with man from the Moustierian time when he can be studied as a group and not as fragmentary bones of contention.

spiritual grace when he sinned. It is obvious that in order to convey his meaning to a rude and simple folk the author must use language which they could understand, and that all its details need not be taken as being objectively true. The sin was pride, so St. Thomas argues at much length when dealing fully with the Fall, and its consequences the cessation of the life of natural happiness which up to that time man had enjoyed. His fault was followed by a life of constant labour and anxiety infected with the taint of original sin—heredity in fact. Anthropological science very naturally has nothing to say about the Fall, and many anthropologists would smile at the idea of their taking it seriously. Why? They certainly cannot disprove it. Neither can they deny the widespread tradition of an age of gold when man was happy and innocent, a legend which is clamant of an explanation and certainly gets one here. Nor again will they deny that the feeling has always been well-nigh universal that there is something wrong between man and his Maker.

> There is a certain uniform deliverance in which all religions appear to meet. It consists in two parts: (1) An uneasiness; and (2) its solution. (1) The uneasiness, reduced to its simplest terms is a sense that

> there is *something wrong about us* as we naturally stand. (2) The solution is a sense that *we are saved from the wrongness* by making proper connection with the higher powers.[4]

The "fundamental conception, ever living and inspiring so many primitive man's other thoughts, is that man in this world is not completely at home."[5] Widespread ideas require to be accounted for, and the Fall of man would account for these. Whoever finds it an unsatisfactory solution is at liberty to produce a better one. As far as I know there is none such.

It is most unfortunate that crass ignorance should lead so many men to suppose that the discussion of questions such as this by Catholic theologians is so much superstitious nonsense. The place to go to have that idea contradicted is to St. Thomas. Read the summing up of that saint's discussion of the Fall by a man not a Catholic himself, who really understood his teachings.

> In presumptuous self-reliance he [Adam] disobeyed the injunction for which he saw no reason, and felt no inward support. He fell through pride. Such was the sin; and

[4] William James.
[5] Le Roy.

the consequence was an exact repetition, or imitation of the sin itself on the part of each one of the appetites and impulses of human nature. Each one of them, too, now asserted itself independently, and clamoured for that which corresponded to its own demand, irrespective of its relation to the harmony of man's life as a whole. Each passion and impulse declared itself competent to judge of its own good, and resented the command to take heed of anything else that did not immediately concern it; and instead of a harmony, man's soul became a sea of tempestuous and warring impulses, while reason must now struggle to maintain its tottering throne over the rebellious passions, instead of itself being the expression of their perfect harmony, the aroma of their very breath. The anthropologists leave no room in the modern creed for a belief in the story of the Garden and the Fall. But Coleridge's contention that the Fall of man is a reality, though it may never have taken place at a definite time or in a definite event, stands for a universal experience or sense that man is not *de facto* what he is *de jure*, and that our customary is not our normal life or character. And I find it hard to conceive that anyone can read Aquinas on the

> state of innocence and the Fall without having his vision cleared and his aspirations quickened, or without feeling that he has for a moment drawn a breath of the air of the homeland to which he inalienably belongs, even should it be the fact that neither he nor any other has ever dwelt there.[6]

Discussions which can produce a result of that kind in a man of that stamp are not to be tossed aside as superstitious rubbish.

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[6] Wicksteed.

Chapter XII

ON SOME REMARKABLE OCCURRENCES INEXPLICABLE ON SCIENTIFIC LINES

It will be observed that I do not say miracles, for the Church reserves the right to decide what are and what are not miracles. That right is exercised after prolonged and meticulously careful examination of proposed cases, and it may certainly be said of them, in the words of Scripture, that "many are called and few are chosen." Perhaps it may be useful also to mention that the first step taken is to rule out absolutely any instance that exhibits any kind of dependence on nervous phenomena. Let it also be noted that this is done in accordance with the instructions for the conduct of such enquiries laid down by Pope Benedict XIV as long ago as 1747, a very long time prior to any similar recognition of such causal nexus between nervous disorders and cures by the medical profession. What I propose to do is very briefly to give the notes of four cases selected from a large number available and ask medical readers of these pages to explain them. I have been connected with medical schools for

fifty years. First as pathologist and later as anatomist, I have been in constant touch with my profession, and I confess that I cannot explain these cases on medical lines. If they cannot be so explained, what shall we do with them? That question will be discussed after the cases have been described.

1. Pierre de Rudder was a wood-cutter who in 1867 sustained a compound fracture of both bones of the left leg in the course of his avocation. As the fracture did not unite, amputation was advised and refused. That condition continued for eight years, and of course, at the close, disintegration had made great inroads on the ends of the bones. In 1875 he went to a shrine at Oostacker, some miles from his home at Jabbeke in Belgium. His limb was in such bad shape that the driver of the diligence complained about the mess that secretions from the wound made on the floor. When he returned that afternoon from the shrine his limb was perfectly cured, nor was it shorter than its mate as might have been expected. The first person to meet him on his return was the man who had derided him at his departure for spending his money on a journey which could lead to no good result. So overcome was the doctor who had been attending him all along that he returned to the practice of his religion which he had neglected for ages.

De Rudder went back to his wood-cutting and worked at it for a number of years afterwards.

2. A priest, aged fifty-one years, had suffered from badly swollen varicose veins which threatened at length to prevent his carrying out his priestly duties. He was a patient of Dr. le Bec, who describes the case and tells how he called one day on him to explain that, much against his will, his archbishop had ordered him to go to Lourdes and bathe his leg. He protested that it would do no good but still out of obedience he must go. The leg was examined then and there and found to be in a very serious state of ulceration, as it had been for some sixteen years. At Lourdes he was instantaneously relieved of all his troubles, and a few days later showed his completely restored legs to the same doctor. Seven years later there had been no return of the trouble and he had been continuously at work.

3. The child of a Catholic doctor was born with congenital club feet. No good result was obtained from the usual operation of tendon division, performed by a specialist. Taken to Lourdes by its parents, not only did the malformation disappear after the third bath, but the muscles of the limb, previously in bad shape from the deformity, were also found to be perfectly normal.

4. There was a medical man in Paris who in

1920 determined to satisfy himself whether the things claimed to happen at Lourdes did or did not occur. First of all, he procured the names of those who were to be taken to Lourdes from Paris in the year 1920. Then he carefully examined all of them, took notes of each case, and accompanied them to Lourdes. Nothing happened, but undaunted he went to work again in 1921. There were thirty-five cases in this year and all of these were carefully examined by the surgeon and full notes taken. One of them presented all the symptoms of pulmonary phthisis with tubercular bacilli in the sputum. Further, there was serious disease of the backbone, with paralysis of the lower extremities. Moreover, the condition was demonstrated and the diagnosis confirmed by X-ray examination. Nothing could be clearer or more classical, and the prognosis was certain death at no distant period. Yet this was the person that the doctor in question saw walk into the Bureau des Constatations at Lourdes, cured after a bath, though still weak. He might well call it "almost an experiment," for he had carefully examined the patient before the visit, accompanied her to Lourdes, and the cure was now certified by him and the other medical men present in the Bureau.

It will be noticed that the cure was instantaneous in all these cases. And now it may be

asked, how are these cases to be accounted for? Suggestion is the first reply and the complete reply in hundreds of cures—for that they are, though in no way miraculous nor incomprehensible. But first of all suggestion certainly played no part in the case of the child nor, we may suppose, in that of the unwilling priest.

And, secondly, who ever heard of suggestion mending broken bones which had been fractured for eight years and mending them in an instant and without shortening? Or whoever heard of suggestion healing dilated veins, whose valves had been destroyed, converting the legs into vast ulcerous patches, and doing it instantaneously and leaving no trace of the former condition? Suggestion must be utterly ruled out of court. Then what? I suppose it will hardly be alleged that the numerous persons that testified in these cases who had nothing to gain by their testimony are all perjurers? Then what? When the de Rudder case was discussed in a Medical Congress in 1902 a German doctor is reported to have said that the account of the cure could not be true because it would contradict all biological and pathological laws. So it could not have happened—but it did, said scores of witnesses, and the actual bones bear out their evidence. I have seen casts of bones, at least purporting to be these, and certainly identical with the pictures

published in the numerous accounts of this case. There can be no doubt that the man's bones had been fractured at the spot mentioned and had reunited without shortening. I am not claiming that any one of these four, or many other occurrences which might be cited, are miracles. What I do claim is that puzzling cases of this sort which cannot be explained on scientific lines do constitute a demand for careful thinking in connection with this topic of miracles.

Huxley asked what evidence one should require for the existence of a centaur—which to his mind would have been a miracle. But he was wholly wrong, for no theologian would call a real centaur a miracle. He would be surprised doubtless and interested in such an animal, but a miracle is an entirely different kind of thing. The occurrences I have briefly described above are of the class of miracles—happenings above but not contrary to nature. The centaur would be contrary to nature, while the cures are not. They differ from what might possibly—though quite improbably—have happened naturally, in having taken place instantaneously. These cases have never been considered by a Church tribunal and are never likely to be, but they are the kind of cases which would be enquired into were the question of canonisation also involved. Perhaps I ought to say that when the enquiry into such

matters is taking place it is not one-sided or biased, but that active intellects are deputised to show that each case can be explained away either because the evidence is not strong enough or because the case can be explained on natural lines. The non-Catholic idea of such tribunals is that of a group of fatuous, almost feeble-minded persons with gaping mouths eager for marvels. That is quite wrong. These investigations are carried out by men as shrewd as those who sit on the benches in any Supreme Court and whose one idea is to get at the truth. Anyone who reads the history of Lourdes or indeed of other like places will see that the invariable first attitude of the local clerical authorities has been one of suspicion and distrust. Only after the facts have conquered them have public demonstrations been permitted. The usual attitude outside the Church is to "pooh-pooh" such occurrences. "They could not possibly happen." One asks, "Why not?" And the usual reply is, "Because miracles don't happen." That of course settles the matter. It may not unfairly be asked, however, whether it is more reasonable to wave these things aside like Mr. Podsnap as not British, or to take the trouble of painstakingly investigating them. After all, the only points are these: Did the things happen as they are reported to have happened? If they did, can they be accounted for

on medical lines? And if not, then how are they to be accounted for? That is the question which this chapter asks and with which this book terminates.

NOTE.—Other books dealing scientifically with the matter of this last chapter are named, as but little space can here be given to this great subject.

De Grandmaison, *Twenty Cures at Lourdes* (Sands & Co.).
Dr. Le Bec, *Medical Proof of the Miraculous* (P. J. Kennedy and Son).
Windle, *On Miracles and Some Other Matters* (Burns, Oates & Washbourne).

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